EXHIBIT E2

CHAPTER 94 REPORT FOR 2020
VALLEY FORGE SEWER AUTHORITY

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**VALLEY FORGE SEWER AUTHORITY REGIONAL TREATMENT PLANT REPORT**	Permit No.:	**PA0043974**
Mailing Address:	**333 PAWLING ROAD**	Effective Date:	**1/1/20**
City, State, Zip:	**PHOENIXVILLE, PA 19460**	Expiration Date:	**12/31/24**
Contact Person:	**Mr. Martin F. Goldberg**	Renewal Due Date:	**7/4/24**
Title:	**Operations Manager**	Municipality:	**Schuylkill Township**
Phone:	**610-935-1553**	County:	**Chester**
Email:	**mgoldberg@vfsa.com**	Consultant Name:	

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

Check the appropriate boxes:

☒ Line graph for flows attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

Check the appropriate boxes:

☒ Line graph for organic loads attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Not applicable

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☒ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment 2**)

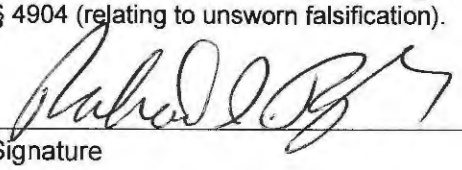
RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Martin F. Goldberg	Martin F Goldberg
Name of Responsible Official	Signature
610-935-1553	5/25/21
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Richard D. Taylor	
Name of Preparer	Signature
610-935-1553	5-25-21
Telephone No.	Date

pennsylvania
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BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT
(In PADEP Format)

CALENDAR YEAR 2020

For: **THE VALLEY FORGE SEWER AUTHORITY**
WASTEWATER TREATMENT PLANT
CHESTER COUNTY, PENNSYLVANIA
333 PAWLING ROAD
PHOENIXVILLE, PA 19460

INTRODUCTION

The Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Schuylkill, East Pikeland, and Charlestown Townships. Additionally, wastewater treatment (not conveyance) is provided to the Partner Municipalities which include Easttown, East Whiteland, Tredyffrin and Willistown Townships and Malvern Borough. On December 19, 2018, Aqua Resources, Inc. purchased the assets of the Valley Creek Trunk Sewer (VCTS) and took over operations December 20, 2018. Beginning with the 2019 VFSA Regional Chapter 94 Report an additional collection system Chapter 94 report submitted by Aqua Resources for the Valley Creek Trunk Sewer (VCTS) system is included.

The VFSA treatment plant began treatment of wastewater during or about January 1978. The plant receives flow from the municipalities listed above from two force mains. There is one thirty inch diameter force main from the Partner Municipalities, containing wastewater flow from the Wilson Road and Valley Creek pump stations. There is also a twenty inch diameter force main from the Member Municipalities containing wastewater flow from the Pickering and Perkiomen pump stations. Flow from the two force mains combines immediately prior to the raw influent structure. The raw influent structure meters and diverts the flow into one of two primary clarifiers (operated in parallel) for gravity settling to remove heavy inorganic and organic solids, also reducing Biochemical Oxygen Demand (BOD_5). Following the primary clarifiers, further reduction of BOD_5, sufficient to also allow Nitrification, occurs biologically in the two activated sludge aeration tanks. Final settling is achieved following the aeration tanks in four final clarifiers also operated in parallel. The final treatment step prior to discharge to the Schuylkill River is ultraviolet light (UV) disinfection. Wastewater solids produced during primary clarification are pumped through cyclone degritters where grit is removed from the wastewater, sent to one of three treatment plant gravity thickeners where it is combined with other plant solids (scum, trucked wastewater and waste activated sludge).

In addition to its connected customers, VFSA also receives regulated and non-regulated (residential) trucked waste at a designated receiving station for preliminary treatment and equalization prior to combination with other plant solids in gravity thickeners. The gravity thickened solids produced in the sludge thickeners are pumped to centrifuges for dewatering. The resulting cake solids produced by the centrifuge dewatering process are alkaline stabilized by mixing dewatered sludge solids with hydrated lime, resulting in a biosolids product registered with the Pennsylvania Department of Agriculture as a fertilizer product. For more than ten years all of the VFSA biosolids have been land applied for beneficial agricultural reuse.

Act 537 Sewage Facility Planning

The long-term wastewater treatment needs for the areas served by the Valley Forge Sewer Authority (VFSA) were described in the Act 537 Plan, which was approved by the PADEP on March 10th of 2009. The basis for the 2009-approved Plan included the expansion of the VFSA treatment plant including the addition of a third aeration tank and a fourth final clarifier,

additional solids handling capacity, and new UV disinfection. UV disinfection was added in the summer of 2011 on an expedited basis in order to provide the required capacity for future disinfection as well as eliminate the risks inherent by the use of liquid chlorine.

In the winter of 2012 after discussions with its partners and the PADEP, VFSA conducted testing which successfully documented the treatment plant's capability to adequately treat wastewater for BOD5 and ammonia removal without the addition of a third aeration tank. With PADEP's concurrence the third aeration tank remains a part of the Act 537 plan, but construction has been deferred to a later date when this capacity may be required. Other items added consist of a third gravity thickener and a new third centrifuge. Final design – consisting of contracts for general construction, mechanical and electrical components - were completed in late 2012 with public bids occurring in January 2013. The three contracts were awarded and construction began in 2013 with substantial completion of the project achieved by October 20, 2016.

Construction of the VFSA influent chamber fine screen for rag and debris removal was substantially completed and placed in operation January 2020. Although this doesn't relate directly to capacity, it will improve upon process stability and reduce O & M costs.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion
Annual Average Capacity	11.75 mgd
Hydraulic Design Capacity	11.75 mgd
Organic Design Capacity	26,700 lbs/day

The 2020 VFSA Annual Chapter 94 spreadsheet attached as Attachment A of Section 1 contains the summary of VFSA's treatment plant flows for the years 2016 through 2020. The Annual Average (AA) flow for 2020 was **6.801** MGD, which is fifty-eight percent of the post-expansion permitted AA capacity of **11.75** MGD.

The 2020 VFSA wastewater treatment plant flow was generated by an average of 30,399 EDUs. The year end baseline EDUs used in the projected flow calculations is 30,518.

By PADEP defimition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any 3 consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2020.

The VFSA treatment plant is not currently in a hydraulic overload condition therefore a Corrective Action Plan (CAP) or Connection Management Plan (CMP) are not applicable.

During 2020 there were ten days on which there were precipitation totals of one inch or greater. There were **no** exceedances of the NPDES permit due to High Flow conditions during 2020.

The annual hydraulic loading from trucked wastes is less than one percent of the total annual plant's influent, is not considered significant in regards to overall plant flow and is not included in the hydraulic projections in the VFSA DEP Chapter 94 spreadsheet.

2. ORGANIC LOADING

VFSA's Annual Average (AA) organic loading for 2020, including trucked in waste loading, was **9,994,** LB/day BOD_5, which is thirty-seven percent of the post-expansion permitted AA capacity of **26,700** LB/day BOD_5.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2020.

Treatment plant influent $CBOD_5$ and BOD_5 samples are twenty-four hour flow proportioned composite samples collected, preserved and analyzed in accordance with

the Title 40 of the Code of Federal Regulations, Part 136. These $CBOD_5$ and BOD_5 samples are collected for analysis from the plant's raw influent structure, after initial mixing of the two force mains tributary to the treatment plant and treatment by the influent fine screen, but prior to any treatment units and recycle/return flows from the treatment plant.

VFSA calculates influent organic loadings for each day on which samples are collected for both influent $CBOD_5$ and BOD_5 utilizing PADEP's recommended method. The results are summarized in the VFSA DEP Chapter 94 spreadsheet.

Trucked waste contributes a BOD_5 load on the plant which should be accounted for and included in the Chapter 94 organic projections. This report maintains that assumption and is confirmed in the 5 year look back table below:

VALLEY FORGE SEWER AUTHORITY
Chapter 94 Historic Organic Loading
Monthly Organic Loading (ppd) Trucked Wastewater

MONTH	2016	2017	2018	2019	2020	Five Year Avg BOD5
JANUARY	2,722	488	707	1,541	773	1,246
FEBRUARY	2,731	457	343	1,393	699	1,125
MARCH	2,176	366	635	1,899	796	1,174
APRIL	2,571	442	586	1,326	671	1,119
MAY	2,452	446	623	1,110	557	1,038
JUNE	1,678	390	708	978	625	876
JULY	679	332	982	1,030	527	710
AUGUST	565	386	641	710	425	546
SEPTEMBER	488	335	594	661	512	518
OCTOBER	632	380	534	1,141	743	686
NOVEMBER	904	431	890	989	763	795
DECEMBER	1,240	240	1,704	1,155	538	975
AVERAGE	1,570	391	746	1,161	636	901
MAX MONTH	2,731	488	1,704	1,899	796	2,731

All values are in Lbs/Day BOD_5

The 2020 monthly average organic loading was calculated by adding the estimated organic loading from trucked in waste to the influent loading and is included in the DEP Chapter 94 spreadsheet monthly organic BOD_5 loads.

All contributing Partners of the regional treatment plant responded to the request for data necessary to compile this report. VFSA coordinates the responses within this submittal. The hydraulic and organic loading projections to establish treatment plant projections were prepared on the basis of wastewater treatment plant flow records and EDU projections supplied by the individual Partner municipalities. Please see Section 3 of the

2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report for copies of the VFSA Member Municipalities and individual Partner Municipality reports.

3. **NOT APPLICABLE**
4. **SEWER EXTENSIONS**
5. **PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION**
6. **CONDITION OF THE SEWER SYSTEM**
7. **SEWAGE PUMPING STATIONS**

Information For Components 4 Through 7, Including The Requested Maps, Data And Supporting Information For Those Components, Can Be Found In The Valley Forge Sewer Authority and Partner Municipality Portions Of Section 3 Of The 2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report.

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the individual member reports attached the following member municipalities currently either have CAP/CMP plans submitted or approved by PADEP, while Malvern Borough, Tredyffrin Township, Valley Forge Sewer Authority and Willistown are currently not in overload conditions and do not require a CAP/CMP plan:

1) Easttown Twp - CAP/CMP approved by PADEP October 25, 2011.
2) East Whiteland Twp - CAP/CMP in effect.

(See the individual partner municipality Chapter 94 Municipal Chapter 94 Wasteload Management Annual Reports in Section 3 for more details.)

10. SEWAGE SLUDGE MANAGEMENT INVENTORY – NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, most meters are calibrated on a quarterly basis). Please see Attachment No. 2 of Section 1 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2020 calibration reports. Meter calibration reports for the whole year are available for review at the VFSA administration building.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 1

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

SPREADSHEET AND GRAPHS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2020

Facility Name: VALLEY FORGE SEWER AUTHORITY

Permit No.: PA0043974

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 11.75 MGD
Upgrade Planned in Next 5 Years? NO **Year:**
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 26,700 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO **Year:**
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2016	2017	2018	2019	2020
January	7.01981	5.825	5.373	9.798	6.606
February	10.25414	5.538	7.411	8.916	7.101
March	7.87968	5.848	8.071	9.790	6.948
April	6.72367	6.492	7.301	7.665	8.088
May	7.29419	5.980	7.603	8.259	7.238
June	6.08067	5.565	8.043	8.026	6.288
July	5.6371	5.211	7.021	7.692	6.225
August	5.50581	5.279	8.115	6.213	6.857
September	5.51233	5.211	9.288	5.704	5.660
October	5.272	5.520	7.874	5.611	5.688
November	5.05633	5.927	9.773	5.805	6.444
December	5.55548	5.908	9.313	6.707	8.466
Annual Avg	6.482600204	5.691911201	7.932132613	7.515421967	6.800774851
Max 3-Mo Avg	8.384540601	6.106903226	8.986622238	9.627785346	7.42445119
Max : Avg Ratio	1.29	1.07	1.13	1.28	1.09
Existing EDUs	26,890.0	28,434.0	28,941.0	29,569.9	30,517.9
Flow/EDU (GPD)	241.1	200.2	274.1	254.2	222.8
Flow/Capita (GPD)	68.9	57.2	78.3	72.6	63.7
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2016	2017	2018	2019	2020
January	14,599	8,569	12,512	14,779	12,830
February	16,042	8,103	12,395	11,060	11,832
March	13,941	9,503	10,437	11,647	10,851
April	12,207	7,742	12,160	10,374	11,052
May	11,429	8,046	9,850	9,307	9,656
June	10,033	6,740	10,413	9,167	8,714
July	7,581	6,365	10,817	12,094	9,812
August	7,596	6,494	8,678	8,933	8,170
September	8,600	8,092	10,371	9,685	8,783
October	8,835	8,727	10,734	12,109	8,371
November	9,638	12,006	10,575	11,696	9,103
December	9,543	8,447	11,600	13,362	10,752
Annual Avg	10,837	8,236	10,879	11,185	9,994
Max Mo Avg	16,042	12,006	12,512	14,779	12,830
Max : Avg Ratio	1.48	1.46	1.15	1.32	1.28
Existing EDUs	26,890	28,434	28,941	29,570	30,518
Load/EDU	0.403	0.290	0.376	0.378	0.327
Load/Capita	0.115	0.083	0.107	0.108	0.094
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2021	2022	2023	2024	2025
New EDUs	814.9	1168.6	818.5	547.0	136.5
New EDU Flow	0.1943	0.2787	0.1952	0.1304	0.0326
Proj. Annual Avg	7.07887	7.35757	7.55277	7.68317	7.71577
Proj. Max 3-Mo Avg	8.31345	8.64075	8.87	9.02314	9.06142
Proj. Overload?	NO	NO	NO	NO	NO

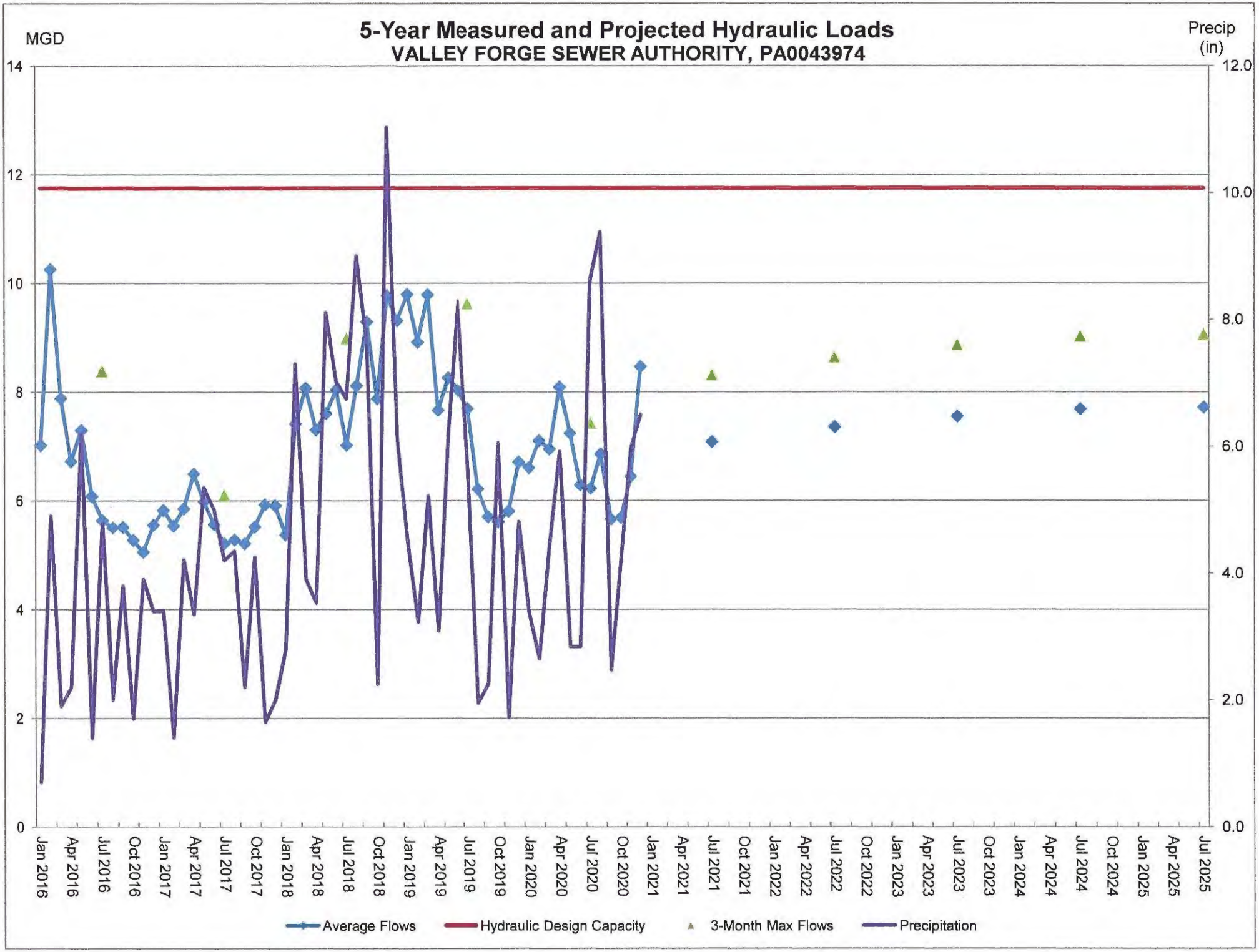
Projected BOD5 Loads for Next Five Years (lbs/day)

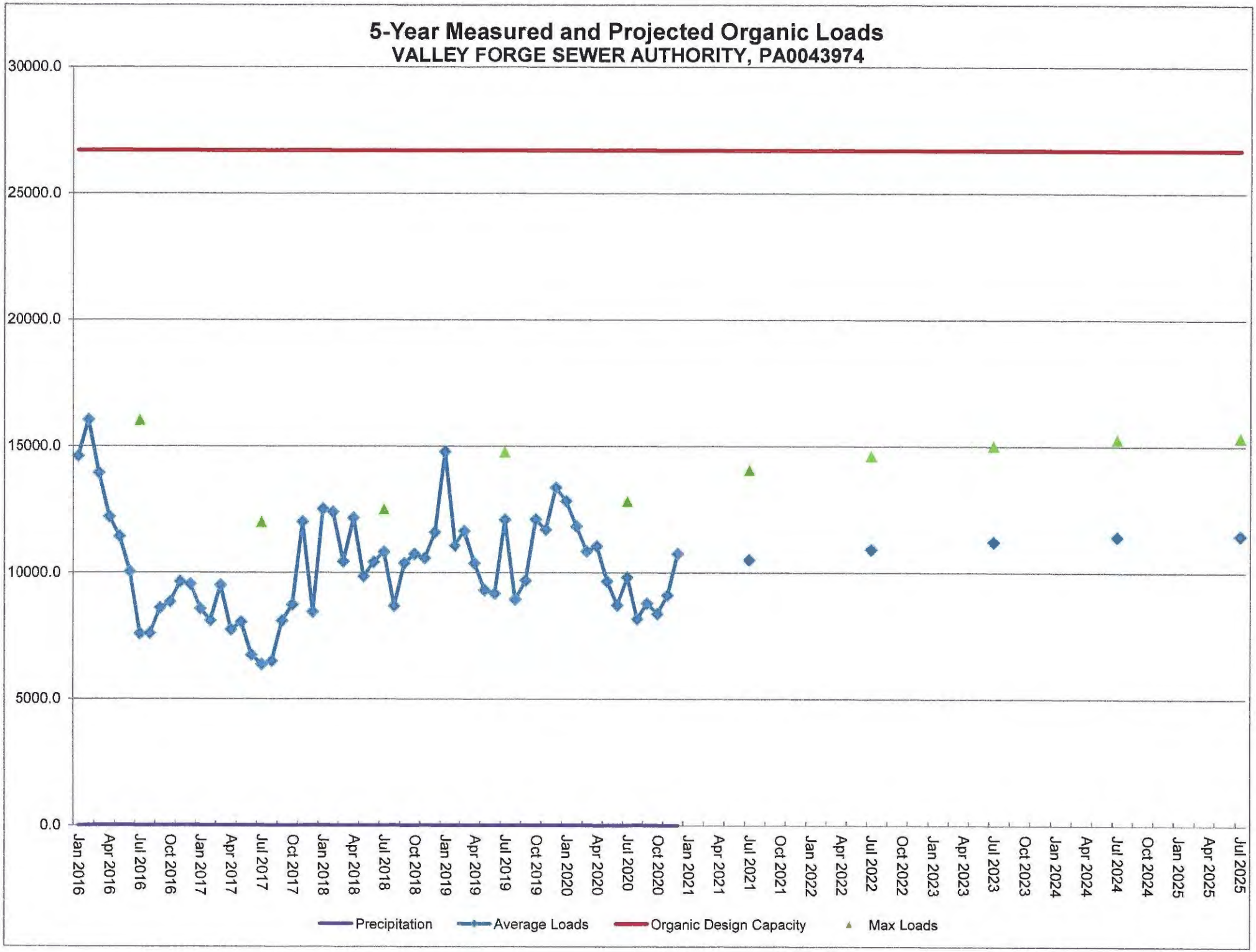
	2021	2022	2023	2024	2025
New EDUs	814.9	1168.6	818.5	547	136.5
New EDU Load	289.170	414.681	290.447	194.105	48.438
Proj. Annual Avg	10,515	10,930	11,220	11,414	11,463
Proj. Max Avg	14,076	14,631	15,020	15,280	15,345
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2016	2017	2018	2019	2020
January	0.7	3.4	2.8	4.5	3.4
February	4.9	1.4	7.3	3.2	2.7
March	1.9	4.2	3.9	5.2	4.5
April	2.2	3.4	3.5	3.1	5.9
May	6.2	5.4	8.1	6.2	2.8
June	1.4	5.0	7.0	8.3	2.8
July	4.8	4.2	6.8	5.7	8.6
August	2.0	4.4	9.0	2.0	9.4
September	3.8	2.2	7.7	2.3	2.5
October	1.7	4.3	2.3	6.1	4.2
November	3.9	1.7	11.0	1.7	6.0
December	3.4	2.0	6.1	4.8	6.5


5-Year Measured and Projected Hydraulic Loads
VALLEY FORGE SEWER AUTHORITY, PA0043974
MGD
Precip (in)
14
12
10
8
6
4
2
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation


5-Year Measured and Projected Organic Loads
VALLEY FORGE SEWER AUTHORITY, PA0043974
30000.0
25000.0
20000.0
15000.0
10000.0
5000.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
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Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
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Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Precipitation
Average Loads
Organic Design Capacity
Max Loads

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 2

METER CALIBRATION DOCUMENTATION

ALLIED CONTROL SERVICES, INC.

611 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

DOCUMENT TRANSMITTAL

TO:
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

ATTN: Mr. Martin Goldberg

TRANSMITTAL NO.: 4
PROJECT NO.:
DATE: 1/6/2021
CARRIER: USPS
REF/P.O. NO.:

ITEM	SIZE	QTY/ TYPE	DRAWING NUMBER	REV NO.	TITLE	TRANS CODE
1		1	Set		Calibration Schedule – 4th Qtr. 2020	1

REMARKS:
Please find the enclosed Booklets/set per the above list

SUBMITTED BY: J. Dapper via D. Reilly

TRANSMITTAL CODES	VENDOR TRAMSMITTAL CODES	SIZE CODES	TYPE CODES
0 – FOR INFO. ONLY	9 – WORK MAY PROCEED	A – 8.5 x 11	C – COPY
1 – FOR REVIEW	10 – REVISE & RESUBMIT	B – 11 x 17	B – BLUELINE
2 – FOR APPROVAL	Work may proceed subject to	C – 18 x 24	S – SEPIA
3 – FOR DESIGN	Incorporation of changes indicated	D – 24 x 36	V – VELLUM
4 – FOR BID	11 – REVISE & RESUBMIT	E – 36 x 48	M – MANUAL
5 – FOR FABRICATION	Work may not proceed		D – DISK
6 – FOR CONSTRUCTION	12 – REVIEW NOT REQUIRED		O - OTHER
7 – AS BUILT	Work may proceed		
8 - OTHER			

/jlpd:20 #4 210106

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section A: Equipment calibrated quarterly (VFSA Pump Stations)
Section B: Equipment calibrated quarterly (EASTTOWN Township)
Section C: Equipment calibrated quarterly (EAST WHITELAND Township)
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section E: Equipment calibrated quarterly (TREDYFFRIN Township)
Section F: Equipment calibrated quarterly (WILLISTOWN Township)

Date: Third Quarterly 2020 Calibration Data

"Section A"

Valley Forge Sewer Authority
Pickering Creek Pump Station
Phone # 610-993-9475
Magnetic Flow meters #1
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Serial #: 0264549
Cal: 1002005509795005
Max Flow: 5000 GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Creek Pump Station
Magnetic Flow meter #3
Instrument Data:

Manufacturer: Sparling
Model #: FM656
Serial #: M156262611
Max Flow: 5000 GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Creek Pump Station
Magnetic Flow meter #2

Instrument Data:

Manufacture: Sparling
Model #: FM655-085-110-0
Serial #: H40050191
Max Flow: 5000 GPM
Sign: Minus
Coil Freq 4
K factor 31.42 PPG
Offset 1.06
D: 7.7500000K Factor:

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Pump Station
O I T
Instrument Data:

Manufacturer: Allen Bradley
Model #: Panelveiw Plus 1000
Serial #: (21)AWOGN5VL
Counter: NONE
Range: 0-5000GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	10-08-20 Ma. = 0 / 5,001/10,000 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Perkiomen Pump Station {935-2150}
Magnetic Flow
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Serial #: 0860131213
Counter: Electronic Totalize X 1
Cal: #0929605509081011
Max Flow: 1500 GPM

Date of Calibration:	12-29-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Perkiomen Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	12-29-20
% of Error:	Approx. avg. Low .30%
Comments:	4-08-20 Ma. = -0 / 748 /1495 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Valley Creek Pump Station (phone:#610-291-0587)
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemoun7
Model #: 8712C
Serial #: 0860250715
Cal#: 115560491152011
Max Flow: 300 GPM

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Valley Creek Pump Station
Recorder
Instrument Data:

Manufacture: Chessel
Model #: 392
Serial #D8950-001-03-03
Counter: Electronic Totalize X 10
Chart: 0-300

Date of Calibration: 10-20-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Valley Forge Sewer Authority
Valley Creek Pump Station
Totalize
Instrument Data:

Manufacturer: AGM
Model #: 4011-10
Serial #: 314-553A
Multiplier X 10

Date of Calibration: 10-20-20
% of Error: Less than .2%
Corrective Action: none

Comments: none

Valley Forge Sewer Authority
Valley Creek Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration: 10-20-20
% of Error: Approx. avg. Low .26%
Comments: Ma. = -.6 / 149.8 / 298.7 GPM
Corrective Action: none

Valley Forge Sewer Authority
Charlestown Meadows Station
Magnetic Flow meters Instrument Data:
Manufacturer: Sparling CODE 1563
Model #: FM656
Serial #: M078233104
Max Flow: 500 GPM
4 inch
K Factor: 256.01 PPG
Offset: 2.37

Date of Calibration: 10-08-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Valley Forge Sewer Authority
Charlestown Meadows Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Sparling CODE 1563
Model #: FM656
Serial #: M078233104
Max Flow: 500 GPM

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Meadows Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	10-08-20
% of Error:	Approx. avg. Low .4%
Comments:	10-08-20 Ma. = -.4 / 248.7 / 498.6 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: Hydro-Ranger
Serial #:021805130VU
Primary Device: 6" Palmer Bowlus Flume
Max Flow: 130 GPM
Totalize Multiplier: X 10

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Miltronics
Model #: Hydro-Ranger
Serial #:021805130VU

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	
% of Error:	
Comments:	Not in Operation
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 1007
Primary Device: 6" Palmer Bowlus Flume
Max Flow: 100 GPM
Totalize Multiplier: X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	
% of Error:	
Comments:	Not in Operation
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 1007
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	01-05-21
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

"Section C"

East Whiteland Township
Lee Boulevard Pump Station
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Warren Avenue Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Minor Hill
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Matthews Road Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Max Flow: 10.0 MGD
Primary: 36" Leopold Lagco Flume
Output: 4-20 MADC (tot x 1000)

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

East Whiteland Township
Matthews Road Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 1eeeern00

Date of Calibration: 10-20-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

East Whiteland Township
Woodveiw Apts
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 2534
Max Flow: 50 G.P.M.
Primary:
Output: 4-20 MADC (tot x 100)

Date of Calibration: 12-17-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

East Whiteland Township
Woodveiw Apts
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 2534
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	none
Comments:	none
Corrective Action:	none

East Whiteland Township
Woodveiw Apts
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4391
Max Flow: 590.0 G.P.M.
Primary:
Output: 4-20 MADC (tot x 100)

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4391
Relay output x 100

Date of Calibration:	10-20-20
% of Error:	none
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Charlestown Oaks Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Charlestown Meadows Station
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20	
Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comment10-07-20s:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration:	12-27-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section E"

Tredyffrin Township
Wilson Rd. Pump Station
Magnetic Flow meter/ Totalizer
Instrument Data:

Manufacturer: Siemens
Model #: 5100W
Serial #: 7ME6910-1AA10-1AA0
Max Flow: 1000 GPM

Date of Calibration:	9-10-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Tredyffrin Township
Wilson Rd. Pump Station
SCADA: Display
Manufacturer: Allen Bradley
Model #: 1771 P7

Date of Calibration:	9-10-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section F"

Willistown Township (610-647-5300 Ext.245) Jim cell (610-656-2074)
Cedar Hollow Road Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Mobrey
Model #: MCU 900
Serial #: 1780418
Max Flow: 3.000 MGD
Primary: 18" Open Flow Nozzle
Multiplier: X 1000

Date of Calibration:	12-22-19
% of Error:	Less than .5%
Comments:	none
Corrective Action:	none

Willistown Township (610-647-5300)
Cedar Hollow Road Meter Pit
Recorder
Instrument Data:

Manufacturer: Future Design Controls
Model #: 5000
Serial: #: 11-02710FD
Max Flow: 3.00 MGD
Chart: 0-100

Date of Calibration:	12-22-19
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2020
VALLEY FORGE SEWER AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

SECTION 2

Environmental Protection by Caring Professionals

Valley Forge Sewer Authority

333 Pawling Road
Phoenixville, Pennsylvania 19460
610-935-1553 Phone
610-983-9684 Fax

March 18, 2021

CERTIFIED MAIL RETURN RECEIPT REQUESTED
Parcel Number 7018 1130 0002 0580 9465

U.S. EPA Region 3 NPDES Pretreatment
Clean Water Branch | Water Division
U.S. EPA Region 3 (3WD41)
1650 Arch St., Philadelphia, PA, 19103

RE: Annual Pretreatment Report for Calendar Year 2020

Attention:

Enclosed please find one (1) copy of the required signatory page, SNC publication and analytical data for Valley Forge Sewer Authority's 2020 Annual Pretreatment Report. The report in electronic format has been already sent along with the analytical data summary.

If you have any further questions please contact me at the number listed above.

Very truly yours,

Richard D. Taylor
Laboratory Supervisor

ENCLOSURES

S:\LAB\LAB\Connected\Ius\Y IU Master Files\Annual Pretreatment Reports\2020 Report\VFSA 2020 Annual Pretreatment Report Cover Page.Doc

21ST CENTURY media

MediaNews Group

PHILADELPHIA GROUP

AFFIDAVIT OF PUBLICATION

307 Derstine Avenue • Lansdale, PA 19446

VALLEY FORGE SEWER AUTHORITY
333 PAWLING ROAD
PHOENIXVILLE, PA 19460
Attention:

STATE OF PENNSYLVANIA,
COUNTY OF MONTGOMERY

The undersigned Sharon Deeth, being duly sworn the he/she is the principal clerk of The Mercury, The Mercury Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

VALLEY FORGE SEWER AUTHORITY

Published in the following edition(s):

The Mercury	03/14/21
The Mercury Digital	03/14/21

PUBLIC NOTIFICATION OF SIGNIFICANT NONCOMPLIANCE OF PRETREATMENT REQUIREMENTS

Pursuant to the requirements of the federal General Pretreatment Regulations For Existing and New Sources of Pollution, 40 C.F.R. 403.8 (f) (2) (viii), Valley Forge Sewer Authority must publish, at least annually, the names of industrial facilities in significant noncompliance of federal and/or local pretreatment requirements.

During 2020, the following industry was determined to be in Significant Noncompliance:

Devault Foods for violation of the requirements to sample, analyze and report the results of certain process discharge parameters during the 2nd quarter of 2020.
MERC March 14 -a1

Sworn to the subscribed before me this 3/15/21.

Maureen Schmid

Notary Public, State of Pennsylvania
Acting in County of Montgomery

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MAUREEN SCHMID, Notary Public
Lansdale Boro., Montgomery County
My Commission Expires March 31, 2021

Advertisement Information

Client Id: 890156 **Ad Id:** 2142739 **PO:** **Sales Person:** 018304

HEALTHCARE

HUMAN SERVICES ASSISTANT

Trenton Psychiatric Hospital is seeking applicants who, under the guidance and direction of a Registered Nurse, will assist in the care of our adult patients who are undergoing treatment for acute and persistent mental illnesses.

All positions are hourly and earn sick leave time. Depending on the needs of our facility at the time of your employment, you may be scheduled to work one of the three shifts: 6:45AM- 3:15 PM, 2:45 PM-11:15 PM, or 10:45 PM-7:15 AM. Some weekend and holiday work will be required.

The pay rate is $16.85 per hour.

Preference will be given to candidates with at least one year of experience in a healthcare related field, or who are currently enrolled in an educational program that is considered to have a healthcare focus.

You must possess a valid driver's license to apply for the position.

Applications can be obtained from the first floor of the Parker Building at the address indicated below or can be requested via e-mail from Deborah.Kidd@doh.nj.gov

Applications cannot be requested via phone call.

Trenton Psychiatric Hospital
100 Sullivan Way
West Trenton, NJ 08628

RESTAURANT FOOD SERVICE

HOST/HOSTESS, SERVERS
Part Time - Must be experienced & dependable.
Call 610-789-7770

ITALIAN DELIGHT-FT/PT-ALL positions. Apply betw 2PM-5PM, 2603 MacDade Blvd. Holmes, PA 19043

SKILLED LABOR

Competitive wage for **full time experienced maintenance mechanic.** Plumbing, carpentry, electrical. Pkg incl available residency (not required) & medical ins, vac and sick time. Please apply at
Pickering Run Apartments
500 Knotterton Road,
Phoenixville PA 19460
610-933-0848

GENERAL LABORER & CARPENTERS. DRIV lic a plus. **CALL 610-428-7942.**

THIS IS THE PLACE FOR CASH! So if you have merchandise to sell, call the classified department today!

SKILLED TRADES

30 YR EST. LANDSCAPE CO. is seeking Foreman/Laborers. No grasscutting. Driv Lic. & transp. Get start pay for qual indiv. 610-494-5204

EXPERIENCED ONLY HARDWOOD FLOOR INSTALLERS/ FINISHERS
to join our team full-time with benefits, excellent starting wage. ***Signing Bonus $500-$1000 for experienced installers.*** If interested please email us your resume at office@mansuetohardwood.com or contact our office at 610 696-6557.

LAWN AND LANDSCAPE POSITIONS AVAILABLE for qualified individuals to operate commercial lawn mowing equipment, string trimming, blowing, raking, installation of plant material, weeding, mulching, general clean-ups, pruning. Experience preferred, but not necessary. Valid PA drivers license required. Operating hours begin at 7:30 am and end between 4:30 pm and 7:30 pm Monday through Friday. Occasional Sat hours are required. Benefits to qualified individuals include paid vacation time, 50% major medical insurance paid by employer. **Contact Jim Baxter at 610-524-9744 or email at baxterlandscape@comcast.net for interview appointment.**

TECHNOLOGY

Sr. Clinical Data Manager, MS. deg. in Healthcare Infor., Pharmacy., w/ 1 yr. of exp., instr. Clin. Dev. team to create & deliver sys. Specif. on EDC sys. using Medidata RAVE, Oracle clinical, RDC & Phase forward. Inform in building database, query mngt. & data cleaning processes; Train clin. trial team on Data Sciences trial-specific sys. like LSH, ECE, SAS GRID & Clinix tools; Guide SAS prog. & clin. biostats in dev. SAS datasets, analyze data, generate TLFs for both safety & efficacy analysis output; Oversee func. groups to review & create cust. reports of clin. data using diff. reporting tool; (J-Review, i-Review, R-Programming, Spears & Spotfire); Mon. jr. clin. data team to dev. SDTM data mapping, & to validate SDTM & ADaM datasets to ensure compl. w/ submission std.; Inspect clin. data mngt. related doc. to ensure compl. to archival/bling req. using TMF & eTMF (Veeva vault tool). Must be willing to travel and/or relocate to work in unanticipated locations throughout the US. Send Resume to PVR Technologies, Inc, 501 Allendale RD, Ste 201, King Of Prussia, PA 19406

CAN'T FIND IT? Find it the easy, effective way. Use a low cost "Wanted to Buy" classified ad.

RESIDENTIAL SALES

All Real Estate advertising in this newspaper is subject to the Federal Fair Housing Act of 1968 which makes it illegal to advertise "any preference, limitation or discrimination, based on race, color, religion, age or familial status, sex or national origin or an intention to make any such preference limitation or discrimination".

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. Phrases like: family room, walk-in closet, private, etc. are meant as descriptive copy only and are not intended to show preference for or exclusion of anyone. To complain of discrimination, call FHCSP at 610-604-4411.

If you have a property you no longer want, CALL ME NOW. I AM A REAL PERSON WHO BUYS PROPERTIES. Single family, multi-family, mixed use, commercial, land/lots, I will buy it. We figure out a solution that works for you.
Call now. 215-326-9186

APARTMENTS FOR RENT (UNFURNISHED)

AMBLER - 1 BR Apartment, 2nd Fl., $900/mo. We provide heat, hot water, and cooking gas, minutes to RR, 309, & PA TPK. **Call 215-646-4109**

BOYERTOWN: A Country Setting, remodeled 1BR (one floor) with new cabinets and appliances and tile kitchen, new carpet in living room and fresh paint, tile bathroom with new vanity, tile laundry room, new carpet in bedroom, front porch to relax on and access to back yard for gardening showing by appointment with basic goods $800 per month plus utilities ask about garage 610-304-5787

CHESTER - 204 West 5th St. ALL NEW!!! 3BR $1000/month. Call Franny 856-341-6516, or Henry 267-997-4466

GILBERTSVILLE- 1ST Floor 1Br, heat incl., LR, EIK, large closet, tiled BA, washer/dryer in basement, $790/mo. available May 1 **610-304-5787**

GLENOLDEN: 1 BR, 1st Flr, WW, No smking/pets. $835/mo. incl ht/wtr. 484-480-3628

Classified Ads get Results!

APARTMENTS FOR RENT (UNFURNISHED)

LINDEN APARTMENTS
(Pottstown, PA) 1 BR $890/mo & 2BR $985/mo. No Pets. HT/HW incl. (610-458-5012)

MEDIA- 2 BR, 1st flr duplex, $1150/mo + utils. Hd flrs, new kitch, micro, new windows, icemaker, tile BA, ceiling fans. N/S, No Pets. **610-368-9278**

NORCO APARTMENTS
(Pottstown, PA)- 1 BR- $900/m & 2 BR- $995/mo., No Pets. Ht/HW incl. **(610) 458-5012**

Ridley Park - Drexel Hill - Sharon Hill - Glenolden: Newly renov 1 & 2 BR's, 700sf, hw. $790-$950. Pets ok. Call **570-703-1087 or 215-964-8089**

YORKSHIRE APTS. (Pottstown PA) - 1 BR, Starting $850/mo 2 BR $1050 No pets. Elevator on Premises. ht/HW incl. **610-458-5012**

HOUSES FOR RENT (FURNISHED)

ALL REAL ESTATE advertising in this newspaper is subject to the Federal Fair Housing Act of 1965, which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, age or familial status, sex or national origin, or an intention to make any such preference, limitation or discrimination."

ROOMS FOR RENT

CHATEAU - Boyertown area. Clean, secure, private parking. $100wk+ (610)367-5112

CHESTER - 714 W. 5th St. Room for rent $400 /month Call Henry 267-997-4466.

CEMETERY LOTS

EDGEWOOD MEMORIAL CEMETERY LOT
Section I, lot 14, unit C4, lots valued $5,100 each great location sell for $2,500 each
CALL 610-395-2674
offers accepted

GARAGE/RENTAL

SPRING CITY - Storage Garage $100/mo + sec. dep. Outdoor drive-up access. Well lit, security cameras **610-469-4668**

COMMERCIAL RENTALS

FOLSOM - 1200 Sq.Ft. SHOP/WRENSE. 1 Ovrhd Dr., 1 Walk Dr. Office w/Pwdr Rm. Off street parking. $895. Mo+Utils. 610-461-0603

PASSENGER CARS

1973 FORD MACH 1
351C rebuilt replacement motor, less than 200 miles, 4 speed, new clutch, needs paint $17,500, 484-942-3551

2004 BUICK PARK AVENUE 137,000. Miles Inspected. Clean Car. $2,000
Contact phone: 610-909-6418

HONDA 2003 ACCORD COUPE-EX-L, V6, AUTO W/ NAVIGATION, 24K, JUST SVCD & INSP, NICE CHEAP RELIABLE CAR. $2800 OBO. 610-566-6981 DAYTIME only.

ANTIQUE & VINTAGE

61 CHEVROLET BISCAYNE
370 HP, 350 Cubic Inch Rebuilt M21 4 Spd. Rebuilt 373 Posi 12 Bolt Rear. New Front Springs, Bushings & Ball Joints, Front Disc Brake Conversion, Weld Wheels, New Tires, New Gas Tank, 3" Exhaust. Asking $13,500.00 Call 610-793-2958 (Please leave message)

JUNKERS & CLUNKERS

WE BUY JUNK CARS
Free Pickup
609-395-4200

AUTOS WANTED

#1 AAA BEST CASH DEAL - I Want your Used Car or Truck. Call Me First before you Sell or Trade-in. **Cash Paid - Prompt Service**
610-532-2054 OR 610-203-7719

ANTHONY'S AUTO SALVAGE
$450-$1800 for most cars & trucks. (484)886-1971

AUTOS & TRUCKS
$500-$3,000
CALL 609-526-3175
OR 609-737-3621

CALL JOHNNY'S JUNK
Cash for Junk cars

LEGAL NOTICES

LEGAL NOTICE

NOTICE IS HEREBY GIVEN in accordance with the Limerick Township Zoning Ordinance of 1961, as amended, of a hearing before the Limerick Township Zoning Hearing Board on Wednesday, March 24, 2021, at 6:30 p.m., at the Limerick Township Municipal Building, 646 W. Ridge Pike, Limerick Township, Montgomery County, Pennsylvania, on the Application of John R. Maddonni, Jr., 333 River Road, Collegeville, Pennsylvania, 19426.

The Applicant is the owner of property located at 40 Penn Road, Limerick Township, Montgomery County, Pennsylvania, identified as Tax Parcel Number 37-00-03498-00-2 (hereinafter referred to as "Subject Property"). The Subject Property is located in an O/LI – Office/Limited Industrial Zoning District, is approximately 5.31 acres in size and is improved with a 25,200 square foot warehouse. The Applicant proposes to convert a portion of the existing warehouse to an indoor recreation facility and is requesting the following relief from the Limerick Township Zoning Ordinance:

1. A variance from § 184-87 to permit the existing 21 parking spaces to satisfy the requirement of off-street parking.

2. A variance from § 184-155 to permit an indoor recreational facility to occupy 10,800 square feet of the existing 25,200 square feet structure.

At the time of the hearing, any person or party interested will be given full opportunity to be heard. The Board reserves the right to conduct such other business as may come before it.

LIMERICK TOWNSHIP ZONING HEARING BOARD
Mark J. John, Chairman

Charles D. Garner, Jr., Esquire
Wolf, Baldwin & Associates, P.C., Solicitor
Merc march 7, 14 a-1

PUBLIC NOTIFICATION OF SIGNIFICANT NONCOMPLIANCE OF PRETREATMENT REQUIREMENTS

Pursuant to the requirements of the federal General Pretreatment Regulations For Existing and New Sources of Pollution, 40 C.F.R. 403.8 (f) (2) (viii), Valley Forge Sewer Authority must publish, at least annually, the names of industrial facilities in significant noncompliance of federal and/or local pretreatment requirements.

During 2020, the following industry was determined to be in Significant Noncompliance:

Devault Foods for violation of the requirements to sample, analyze and report the results of certain process discharge parameters during the 2nd quarter of 2020.
MERC March 14 -a1

SHERIFF SALES

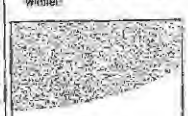
SHERIFF'S SALE
By virtue of a Writ of Execution No. 2019-13474 issued out of the Court of Common Pleas of Montgomery County, Pa., to me directed will be sold at Public on-line auction conducted by Bid4Assets, 8757 Georgia Ave., Suite 520, Silver Springs, MD 20910
WEDNESDAY, MARCH 31, 2021
At 1:00 p.m., prevailing time, by accessing the web address: www.bid4assets.com/MontcoPASheriff the following described Real Estate:
ALL THAT CERTAIN brick dwelling house and the lot or piece of ground on which the same is erected, situated on the Northerly side of Spruce Street, Eastward of Diamond Street, being #847 Spruce Street, in the Borough of Pottstown, County of Montgomery and Commonwealth of Pennsylvania, more fully bounded and described in accordance with a survey thereof made by Ralph E. Shaner and Son on October 24, 1942, as follows, to wit:
BEGINNING at a point on the Northern lot line of Spruce Street (50 feet wide) Eastward a distance of 37.42 feet from the intersection of the Northern lot line of Spruce Street with the Northeasterly lot line of Diamond Street (50 feet wide); thence along property

SHERIFF SALES

CONVEYED UNTO JULIA J. LAWRENCE.
PARCEL NO. 16-00-28272-02-6
LOCATION OF PROPERTY: 847 Spruce Street, Pottstown, PA 19464
IMPROVEMENTS THEREON ARE: A single family residential dwelling
SEIZED AND TAKEN IN execution as the property of JULIA J. LAWRENCE
REAL DEBT: $49,017.02
And to be sold by Sheriff of Montgomery County
Down money: Prospective bidder must complete the Bid4Assets on-line registration to participate in the auction. The highest bid shall be paid to them, on their website, as the purchase price for the property sold by the Sheriff's Office, Norristown, PA
To all parties in interest and claimants: Notice is hereby given that a schedule of distribution will be filed by the sheriff 30 days after the date of the Sale. Distribution will be made in accordance with the schedule unless exceptions are filed hereto within ten (10) days thereafter.
Merc-Mar 7, 14, 21

SHERIFF'S SALE
By virtue of a Writ of Execution No. 2020-04941 issued out of the Court of Common Pleas of Montgomery County, PA., to me directed will be sold at a Public on- line auction conducted by Bid4Assets, 8757 Georgia, Ave., Suite 520, Silver Springs, MD 20910.
Wednesday, March 31, 2021
At 1:00 p.m., prevailing time, by accessing the web address: www.bid4assets.com/MontcoPASheriff
the following described Real Estate:
ALL THAT CERTAIN condominium situated in Borough of Schwenksville, Montgomery County, Commonwealth of Pennsylvania, being known and designated as lot 1b, block 1, section 126, metes and bounds property, as more fully described in deed book 5636, page 1179, dated 02/07/2007 and recorded 02/22/2007, Montgomery County records, Commonwealth of Pennsylvania.
PARCEL ID # 2000000060109
BEING KNOWN AS (for informational purposes only): 4522 Forest Lane a/k/a 4522 Forest Lane Condo B-1, Schwenksville, PA 19473
BEING THE SAME PREMISES which Barry Yost by Deed dated February 7, 2007 and recorded February 22, 2007 Book 5636, Page 01179 in the Office of the Recorder of Deeds in and for the County of Montgomery, Pennsylvania granted and conveyed unto Kurt T. Dannerth, in fee.
Parcel no.: 20-00-00060-10-9
Location of property: 4522 Forest Lane a/k/a 4522 Forest Lane Condo B-1, Schwenksville, PA 19473
The improvements thereon are: A RESIDENTIAL DWELLING
Seized and taken in execution as the property of: Kurt T. Dannerth
Real debt: $125,128.36
And to be sold by the Sheriff of Montgomery County
Down money: Prospective bidder must complete the Bid4Assets on-line registration process to participate in the auction. The highest bid shall be paid to them, on their website, as the purchase price for the property sold by the Sheriff's Office, Norristown, PA.
To all parties in interest and claimants: Notice is hereby given that a schedule of distribution will be filed by the Sheriff 30 days after the date of the Sale. Distribution will be made in accordance with the schedule unless exceptions are filed hereto within ten (10) days thereafter.
Merc-Mar 7, 14, 21

CLASSIFIEDS WIN!!
When it comes to saving time, energy and money. Classifieds are in first place! Place your classified and see how easy it is to be a winner!



Be Safe.

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Print/File to EPA Region 3

The signature certification page must be printed, signed, and sent in hard copy to US EPA Region 3 at the following address:

Pretreatment Coordinator
US EPA Region 3
Mail Code 3WD41
1650 Arch Street
Philadelphia, PA 19103-2029

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

#N/A

Leonard Pinchok

Authorized Signatory Official

03/18/2021
Date

Leonard Pinchok/General Manager
Print or type name and title

Note: The Signatory Official is the person authorized by the POTW to sign the Annual Report (see 40 CFR Section 403.12(m)).

The following documents may be attached to the email or hard copies can be mailed to US EPA Region 8

1. A copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.
2. The results of all influent monitoring results that were performed as required in the Pretreatment section of your state issued NPDES permit. The results must include the name of the pollutant, measured concentration, analytical method used, detection limit, date
3. The results of all effluent monitoring results from the monitoring required by the Pretreatment section of your state issued NPDES permit. Provide monitoring results for those pollutants that were reported above the detection limit. The results must include the
4. The results of all monitoring results for biosolids (sludge) monitoring for any pollutants listed in 40 CFR Part 122, Appendix D, Table II, III, and V. This is for final sludge to disposal only. This monitoring may have been required by your state issued NPDES permit, or

Time Stamp: 03/18/2021 11:53:43 AM
User Stamp: #N/A

EPA Region 3
Industrial Pretreatment Program

Annual Report of POTW Implementation

Last Updated: 01-08-2021

Disclaimer
This model is intended to be used as a tool to submit the Pretreatment Annual Report of the EPA Region 3 Industrial Pretreatment Program. All other uses are strictly prohibited. Unless specified otherwise, enter data for the reporting year.

Accept

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Press Ctrl-h to return to this sheet from any other sheet

POTW

POTW Contacts

POTW Information

Send Copies To

///End of Sheet

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Reporting Period

January 1 to December 31 of year	2020

POTW Contacts

Control Authority Name	VALLEY FORGE SEWER AUTHORITY
NPDES Permit No	PA0043974
Permit Issuance Date	12/11/2019
Permit Expiration Date	12/31/2024
Facility Name	VALLEY FORGE SEWER AUTHORITY
Facility Address1	333 Pawling Road
Facility Address2	
Facility City	Phoenixville
Facility State	Pennsylvania
Facility Zip	19460-2656

Pretreatment Contact(s) - List all Pretreatment Personnel

	Name	Title	Email
1	Richard D. Taylor	Laboratory Supervisor	rtaylor@vfsa.com
2	Robin D. Heffner	Compliance Specialist	pretreat@vfsa.com
3	Shelly A. Herman	Compliance Specialist	pretreat@vfsa.com
4			
5			
6			

Permit Signatory	Leonard Pinchok
Permit Signatory Title	General Manager
Contact Phone	610-935-1553
Contact Email	lpinchok@vfsa.com
POTW Site Address	333 Pawling Road, Phoenixville, PA 19460-2656

Additional Information

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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POTW Information

NPDES Effluent Violations?	Yes	**Parameter(s)**	Fecal coliform
Date of Violations	June 4, 2020; August 5, 2020; October 30, 2020		
Cause of NPDES permit violations?	June 4, 2020: Violations of the Instantaneous Maximum limitation for fecal coliform		
Sludge Disposal Method 1	Land Application Class A		
Sludge Disposal Method 2	Land Application Class B		
Sludge Disposal Method 3	Landfill (only if necessary)		
Highest Treatment Level	Advanced Secondary		

Treatment Types

Primary Clarification?	X	**Lagoon?**	
Secondary Clarification?	X	**Anaerobic Digestion?**	
Activated Sludge?	X	**Aerobic Digestion?**	
Trickling Filter?		**Chlorination?**	
Oxidation Ditch?		**Dechlorination?**	
Biotowers?		**UV Disinfection?**	X
Rotating Biological Contacts?			
Other?	Influent Fine Screen, Primary Sludge Degrit, Gravity Sludge Thickening, C		

POTW Design Flow (mgd)	11.75	
POTW Actual Flow (mgd)	6.514	
Total SIU Flow (mgd)	0.265	
% Industrial Flow	4	%
POTW Organic (BOD) Design Capacity (lbs/day)	26700	
POTW TSS Design Capacity (lbs/day)	19599	
POTW Ammonia (NH3) Design Capacity (lbs/day)		
Actual or Estimated total Flow for Commercial (Non-SIU) Dischargers		

Additional Information

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Program Implementation

Number of Permitted Industrial Users as of December 31

CIUs	4	
Total SIUs	8	includes CIUs + SIUs
Other Permitted IUs	0	
Zero-Discharge CIUs	0	
Permitted Zero-Discharge CIUs	0	
Middle-Tier CIUs	0	
Non-Significant CIUs	0	

SIUs with No/Expired Permit as of December 31	0
SIUs with Administratively Extended Permits >180 Days	0
Number of SIUs with current control mechanisms	8
Number of NSCIUs that have violated any pretreatment standard	0

Number of SIUs in significant non-compliance (SNC) as of December 31

	CIUs	Non Categorical SIUs	Total SIUs
SNC Self-monitoring			0
SNC Reporting			0
SNC PT Standards			0
SNC Prohibitions			0
SNC Compliance Schedule			0
SNC Pass Through/interference			0
SNC Other SNC Violations			0

Number of SIUs in significant non-compliance (SNC) at any time	1
Number of non-SIUs in significant non-compliance (SNC) at any time	0
Number of SIUs in SNC during the previous calendar year	0
SNC during the July to December period	0

# Permitted Non-SIUs With Unknown Compliance Status	0
# SIUs With Unknown Compliance Status	0
Does the ERP include escalating enforcement actions for SNC	YES

	CIUs	Non Categorical SIUs	Total SIUs
Number of SIUs with compliance schedule as of December 31	0	0	0

Additional Information

Two of the CIUs are trucked waste only as they are not connected to the sanitary sewer system.

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Enforcement Actions

	Non-SIUs	SIUs	CIUs
Number of NOVs	2	2	0
Number of Formal Enforcement Actions	0	0	0
Number of different IUs with Formal Enforcement Actions	0	0	0
Number of SIUs on formal compliance schedule	0	0	0

Formal actions include Administrative Orders, show cause hearings, out-of-court settlements that are formal settlements, termination of service, formal compliance schedules, penalty actions EXCEPT civil or criminal suits.

	Civil	Criminal	Total
Number of suits filed against SIUs	0	0	0

	Non-SIUs	SIUs
Number of Different IUs From Whom Penalties Were Collected	0	0
Total Penalties Collected	$-	$-

Number of IUs Published As Being In SNC	1	Please complete Attachment B

Additional Information

Devault Foods failed to complete and report results for all 2nd quarter 2020 parameters, as required by the

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Compliance Monitoring

	Non-SIU	SIU
Number of individual permits issued	0	0
Number of general permits issued	0	0
Number of inspections in the reporting year	8	8

Overview description of Non-SIU inspections	Not applicable
Number of SIUs not inspected during the reporting year	0
Number of SIUs that submitted required Self-Monitoring Reports	6
Number of SIUs not sampled during the reporting year	0
Number of SIUs in SNC With Self-Monitoring Requirements That Were Not Inspected or Sampled	0

Additional Information

VFSA conducts the monitoring for the trucked CIU's and does not require self-monitoring reports.

Facility Name:
Permit Number:
Reporting Period:
POTW Name:

Return to Home

Program Implementation - Resources

Number of Pretreatment FTEs

Significant Changes (+/- 20%) to The POTW's Pretreatment Program Budget or Staffing?

Source of Budget

Total Pretreatment Program Budget

Number of Jurisdictions Covered By Pretreatment Program

Adequate delegation in each jurisdiction?

Miscellaneous Developments and Special Initiatives?

One VFSA laboratory employee position is designated as full time for industrial pretreatment, although industrial pretreatment program implementation and enforcement is accomplished through the collaborative efforts of the laboratory staff. As required, other VFSA laboratory and admininstrative employees are also available to ensure implementation.

Additional Information

VFSA has three full time laboratory/pretreatment employees including the laboratory supervi

#N/A
PA0043974
2020
VALLEY FORGE SEWER AUT

1
NA
Initial, Annual and Re-perm
NA

8
YES
NA

sor. VFSA does r

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Program Implementation - Hauled Waste

Does the POTW receive any discharges of

Receive Groundwater From Hydrocarbon Cleanup Site?	NO
Receive Hauled Septage (Domestic Only)?	YES
Receive Hauled Waste From Industrial Sources?	YES
Receive Hauled Waste From Commercial Sources?	YES
Receive Hauled Categorical Waste?	YES
Receive Hauled Grease Interceptor/Trap Waste?	NO
Receive Landfill Leachate?	YES
Receive CERCLA Cleanup Wastes?	NO
Receive Hazardous (RCRA) Waste?	NO
RV Dump Stations in Service Area?	NO
Receive Other Unique Waste?	NO
Receive Oil & Gas Waste from Stripper wells?	NO

As defined at 40 CFR

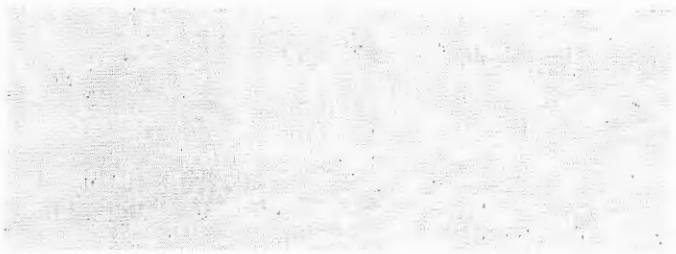
If you accept any trucked or hauled waste, indicate all of the following that apply to your POTW

Legal Authority To Control Hauled Waste?	YES
POTW Issues Permits For Hauled Wastes?	YES
POTW Has A Designated Disposal Site For Hauled Wastes?	YES
POTW Controls Access At The Designated Disposal Station?	YES
POTW Uses A Manifest System To Track/Control Hauled Wastes?	YES
POTW Believes That Illegal Dumping May Be Occurring In Its Jurisdiction?	NO

What parameter if any do you surcharge

Surcharge for BOD?	YES
Surcharge for TSS?	YES
Surcharge for Oil and Grease?	NO
Surcharge for Flow?	NO
Surcharge for Ammonia?	NO
Surcharge for COD?	NO
Surcharge for TKN?	NO
Surcharge for Other Parameters?	NO

Additional Information



{ Part 261 and delivered by truck, rail or dedicated pipeline

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUT

Return to Home

Program Implementation - Pass/INTF

Instances Of Interference At The POTW?	NO
Instances Of Pass Through At The POTW?	NO

Receive Notification Of The Discharge Of Any Hazardous Waste?	NO

If so, names of IUs

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Additional Information

Facility Name:
Permit Number:
Reporting Period:
POTW Name:

Return to Home

Attachment A: List of CIUs/SIUs

		PERMIT INFO					SIU Info			
	SIU	Issued	Effective	Expires	Permit Type	Address	Sampled	Inspected	MRS	# of self-monitorings conducted/ required
1	Beyond Meat	11/1/2018	11/1/2018	6/30/2021	IP	Devault Lane,	1	1		54/52
2	Fujirebio Diagnostics,	11/1/2018	11/1/2018	6/30/2021	IP	201 Great Val	1	1		4/4
3	LOPAREX	11/1/2018	11/1/2018	6/30/2021	IP	2400 Contine	1	1		4/4
4	Janssen Biotech Inc.	11/1/2018	11/1/2018	6/30/2021	IP	90 Great Valle	1	1		12/12
5	Catalent	11/1/2018	11/1/2018	6/30/2021	IP	333 Phoenixv	1	1		4/4
6	Paoli Memorial Hospi	11/1/2018	11/1/2018	6/30/2021	IP	255 W Lancas	1	1		2/2
7	Accupac, Inc.	2/18/2021	2/1/2021	1/31/2024	IP	1501 Industria	2	1		0/0
8	Colorcon	2/18/2021	2/1/2021	1/31/2024	IP	415 Moyer Bl	2	1		0/0
9										

#N/A
PA0043974
2020
VALLEY FORGE SEWER AUTHORITY

Limits Type	MWG	Jurisdiction	SIC Code1	SIC Code2	Categorical Standard	Total Average Process Flow (gpd)
Concentration-based		Charlestown Twp				31100
Concentration-based		East Whiteland Twp	2835			4000
Concentration-based		Tredyffrin Twp				0
Concentration-based		East Whiteland Twp			4O CFR PART 439	121115
Concentration-based		East Whiteland Twp	2834		4O CFR PART 439	1650
Concentration-based		Willistown Twp				0
Concentration-based		Lower Salford Twp			4O CFR PART 439	19936
Concentration-based		Upper Gwynedd Twp			40 CFR PART 414	10304

Total Average Facility Flow (gpd)	MTCIU or NSCIU?	Justification	Discharge Status	Description	SNC?
31100				Formerly Devault Foods - Beyon	NO
10296					NO
571				Formerly Infiana USA.	NO
121115					NO
3242				Formerly Micron Technologies,	NO
68860					NO
19936				VFSA conducts all sampling and	NO
10304				VFSA conducts all sampling and	NO

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORI

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Attachment B: Copy of Newspaper Notice of SNC

Provide a copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.

Copy of Newspaper Notice of SNC submitted?	YES

Additional Information

Devault Foods failed to complete and report results for all 2nd quarter 20

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUT

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Attachment C: Description of Each Incidence of Pass Through or Interference

Provide a description of each incidence of Pass Through or Interference at the wastewater treatment plant or collection system during the year, the cause if determined, and any actions taken by the POTW in response to the Pass Through or Interference.

	Description of Pass Through/Interference
1	NA
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Additional Information
NA

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SI

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Attachment D: Description of Significant Change in Program Funding/Staffing
An explanation of any significant decrease (20% or greater) in pretreatment funding or staffing of the POTW's Pretreatment Program.

Description of Significant Change in Program Funding/Staffing

NA

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Attachment E1: Permitted Industrial Users (part 1 of 2)
Provide a printout or listing of all permitted non-SIUs

	Permitted Non-SIUs	Rationale for permitting these non-SIUs
1	NA	
2		
3		
4		
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11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Add more rows

Additional Information

NA

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Attachment E2: Permitted Industrial Users (part 2 of 2)
Provide a printout or listing of all SIUs covered by a General Permit

	SIUs covered by a General Permit	Justification Criteria
1	NA	
2		
3		
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5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Add more rows

Additional Information

NA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2020
VALLEY FORGE SEWER AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

SECTION 3

Birdsboro Office
321 North Furnace Street, Ste. 200
Birdsboro, PA 19508
T 610.374.5285
F 717.560.2778

March 12, 2021

Richard Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

RE: Easttown Township
2020 Chapter 94 Report
ARRO # 5080.95

Dear Mr. Taylor:

On behalf of our client, Easttown Municipal Authority, please find enclosed the Authority's 2020 Annual Report for inclusion within the 2020 VFSA Chapter 94 Report. We trust that you will find the enclosed information satisfactory.

As always, if you have any questions or require any additional information, please feel free to contact me via email at brady.flaharty@arroconsulting.com or telephone at 610.495.2118.

Sincerely,

Brady L. Flaharty

Brady L. Flaharty, P.E.
ARRO Consulting, Inc., Easttown Municipal Authority Engineer

BLF:

Enclosure

c: Donald C. Curley, Administrator – Easttown Municipal Authority (w/ encl.)

F:\Easttown\Authority\Chapter 94 Report\Chpt 94_2020\Report\Ch 94 Rpt_2020_VFSA Trans Ltr_2021-03-12.docx

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

2020
EASTTOWN MUNICIPAL AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

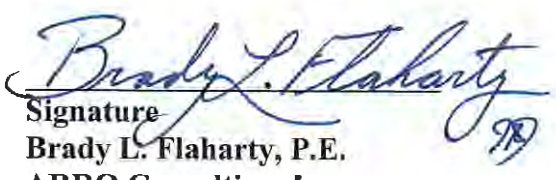
Prepared by:

ARRO CONSULTING, INC.
1450 East Boot Road
Building 100-B
West Chester, Pennsylvania 19380
(484) 999-6150

Prepared for:

EASTTOWN MUNCIPAL AUTHORITY
566 Beaumont Road
Devon, Pennsylvania 19333
(610) 687-3000

Preparer



Signature
Brady L. Flaharty, P.E.
ARRO Consulting, Inc.
Authority Engineer

EASTTOWN MUNICIPAL AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT
OPERATING YEAR 2020

Table of Contents

EXHIBITS

1. INTRODUCTION

This Municipal Wasteload Management Annual Report is prepared in accordance with the Pennsylvania Department of Environmental Protection (Department) Chapter 94 for the Easttown Municipal Authority sewerage collection and conveyance system tributary to the Valley Forge Sewer Authority Wastewater Treatment Plant.

Easttown Municipal Authority (Authority) owns the sanitary sewer collection and conveyance systems within Easttown Township under Water Quality Management Permit No. 1503401. Easttown Township operates and maintains the facilities.

The Authority sanitary sewer collection system provides for collection of domestic sewage from Easttown Township, a suburban residential area encompassing several watersheds. Wastewater from each of these watersheds flows by gravity to one of twelve pumping stations, which ultimately convey the wastewater to a wastewater treatment plant operated by the Valley Forge Sewer Authority via the Aqua Resources, Inc.'s Valley Creek Trunk Sewer (VCTS) collection system. There is a small portion of the system, consisting of approximately 50 homes in the Valley Forge Road area, which drains through the Tredyffrin Township collection system into the Radnor-Haverford-Marple Authority system. There is also a small portion of the system, comprised of approximately 176.4 EDUs, that drains through Tredyffrin Township to Upper Merion Township's Trout Run Water Pollution Control Center.

The sanitary sewer collection system is comprised of roughly 319,415 lineal feet of Authority gravity sewer and 15,980 lineal feet of private gravity sewer, with approximately 1,743 manholes, and 8,011 lineal feet of low pressure force main. There are approximately 2,945 residential homes and 317 small businesses connected to the collection system. The conveyance systems are comprised of twelve (12) sewage pump stations with approximately 41,344 lineal feet of force main.

2. HYDRAULIC LOADINGS

Sewage flow from the Authority system is measured at three pumping stations, Berwyn, Daylesford and Saybrook, which each convey wastewater directly into the Tredyffrin Township collection system.

Exhibit 'A' contains a summary of Easttown total monthly flow to VFSA for 2020 and the previous 4 years, along with the 2020 monthly rainfall. The 2020 monthly flow and rainfall is charted in Exhibit 'E'.

During 2020 the measured sewage flow from the Authority sewer system averaged 1,283,410 gallons-per-day. This represents a decrease of approximately 66,581 gallons-per-day versus 2019 flows.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The total number of EDUs connected at the end of 2020 was 3857.4, which produced an average annual flow of 1.283 MGD and 332.7 gpd/EDU.

The number of EDUs and total average daily flow over the next five (5) years are both projected to increase as follows:

		Additional # of EDUs	*Total # of EDUs*	*Total Flow (MGD)**
Actual	*2020*	6.7	3,857.4	1.283
Projected	*2021*	60.5	3,917.9	1.304
Projected	*2022*	60.5	3,978.4	1.324
Projected	*2023*	60.5	4,038.9	1.344
Projected	*2024*	60.5	4,099.4	1.364
Projected	*2025*	60.5	4,159.9	1.384

* Projected flows are based on 2020 average gpd/EDU.

The increase in the number of connections was derived by interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the *Act 537 Supplement for Wilson Road Force Main*, Table 3-3, Average Daily Wastewater Flow Projections.

A summary of the EDUs, flows and organic loadings over the last five years and those projected for the next five years, along with graphs depicting the past and projected flows

and loadings, are included in Exhibit 'B'. The 2020 average annual loading was estimated to be 2,408 lbs./day based on an assumed BOD5 concentration of 225 mg/l. The maximum 1-month loading was estimated to be 3,257 lbs./day. The average 5-year ratio organic peaking factor is 1.38.

4. SEWER EXTENSIONS

There were three sewer extensions constructed in 2020, which were in the Berwyn Pump Station drainage area (Berwyn Village, Phase 1; 200 Church Road; 616 Leopard Road Subdivision).

Exhibit 'C' contains an updated Easttown Township Approved and Projected EDU map and an accompanying tracking list for the sanitary sewer system. EDUs are tracked by both Authority pump station drainage area and unmetered drainage area to the Valley Forge Sewer Authority wastewater treatment plant, by unmetered drainage area to the Radnor-Haverford-Marple Sewer Authority wastewater treatment plant and by unmetered drainage area to the Upper Merion Township Trout Run water pollution control plant. There are currently 4,114.9 EDUs connected to the Easttown Township sanitary sewer system with 4,732 projected to be connected by 2040. The tracking list and map is updated periodically as requests for connections are made and the Department approves EDUs.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

The sewer system is maintained by the Township Sewer Crew. The basic operation force consists of one (1) Crew Chief, and three (3) Pump Station Operators. This group is responsible for routine sewer and pump station maintenance and repairs. The Sewer Crew personnel on a daily basis check all pump stations with various readings and notations made for each station as well as conditions and status of major operational components. Each pump station is equipped with various alarms and an automatic dialer to notify Sewer Crew personnel in the event of an equipment malfunction or an unusual system condition. The Sewer Crew also has computer software installed at the Municipal

Garage and at the Crew Chief's home that allow real-time monitoring of each pump station. Additionally, a weekly "on-call" rotation is in place whereby two of the four-man crew is available at any given time to handle emergency situations.

The Township contracts with Municipal Maintenance Company (MMC) to provide quarterly detailed inspections of each station within the system. MMC generates a report detailing specific conditions and suggested corrective measures. Township personnel formulate a plan to perform the necessary maintenance and repair, either in-house or contracted services. All necessary repairs are made in a timely manner.

6. CONDITION OF THE SEWER SYSTEM

During 2020, six sanitary sewer overflow events were reported within the Authority's collection system.

- Four (4) overflow events occurred within the Berwyn Pump Station drainage area. The existing WQM permit issued by PADEP prevents the Township from setting the pump variable frequency drives to ultimate station capacity. PADEP directed the Township to submit an Act 537 Special Study, which was submitted and approved in 2020. The resetting of the VFDs to ultimate capacity would likely mitigate the likelihood of future wet weather events.
  - **January 25, 2020**: A total of 2.21 inches of rain fell. The station went into high-water alarm. For approximately 1 ½ hours an unknown amount of sewage leaked from MH #1267 into the adjacent unnamed tributary to the Darby Creek.
  - **July 10, 2020**: A total of 3.21 inches of rain fell. The station went into high-water alarm. For approximately 2 hours an unknown amount of sewage leaked from MH #1267.
  - **August 4, 2020**: A total of 5.86 inches of rain fell. The station went into high-water alarm. For approximately 3 ½ hours an unknown amount of sewage leaked from MH #1267.
  - **December 24, 2020**: A total of 2.65 inches of rain fell. The station went into high-water alarm. For approximately 2 hours an unknown amount of sewage

leaked from MH #1267. After the rain subsided the station was able to maintain incoming flow.

- Two (2) overflow events occurred within the Daylesford Pump Station drainage area. The existing WQM permit issued by PADEP prevents the Township from setting the pump variable frequency drives to ultimate station capacity. The resetting of the VFDs to ultimate capacity would likely mitigate the likelihood of future wet weather events.
  - **August 4, 2020**: A total of 5.86 inches of rain fell. For approximately 2 hours an unknown amount of sewage leaked from MH #1146. After the rain subsided the station was able to maintain incoming flow.
  - **December 24, 2020**: A total of 2.65 inches of rain fell. For approximately 2 hours an unknown amount of sewage leaked from MH #1146.

The Authority has televised certain portions of the sanitary sewer system in the Berwyn, Daylesford, Devon Hunt, Exeter, Millbrook, Newtown, Pinecroft, Saybrook and Spring Knoll Pump Station drainage areas. From 2012 through 2017 approximately 79,369 ft. of sanitary sewer has been televised. The televising found 80 pipe segment defects, 72 lateral defects and 23 manhole defects that were allowing or had potential to allow infiltration into the sanitary sewer system. Inflow/Infiltration (I/I) mitigation repair activities to correct defects found during the televising were started in July 2011 and continued through 2020.

7. SEWAGE PUMPING STATIONS

The Township operates twelve (12) pumping stations owned by the Municipal Authority. All pumping stations are equipped with magnetic flow meters that measure the flows. Exhibit 'D' contains the 2020 flow information for each pump station.

During 2020 no overflow event was reported at any of the Authority pumping stations.

The Daylesford Pump Station's Sharps Woods Gravity and Force Main Replacement project was substantially completed in November 2020.

As a result of completed and planned I/I reduction work it is anticipated that there will be no need to upgrade or expand the Saybrook Pump Station.

8. PUMPING STATION FLOW DURING MAJOR STORM EVENTS

The Department requires Chapter 94 reports to include a discussion of metered flow data for the collection and conveyance systems, specifically during major storm events (greater than 1.0 inch of rain).

Exhibit 'F' contains a summary of Easttown total monthly flow versus rainfall to VFSA from its three major pump stations – Berwyn, Daylesford and Saybrook – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'G' contains a summary of monthly flow versus rainfall at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'H' contains a summary of the rainfall and the metered flows at all twelve (12) of the Authority's pump stations for the ten (10) days in 2020 where rain fell more than 1-inch plus in a 24-hour period. The charts in Exhibits 'I' and 'J' were developed from this data.

Exhibit 'I' contains a chart for the Berwyn, Daylesford, and Saybrook Pump Stations during the ten (10) rain events. As related to yearly average flow, the peaking factors for the three pump station meters during the rain events are as follows:

Pump Station	Yearly Avg. Flow (MGD)	Rain Events Peaking Factor	
		High	Average
Berywn	0.8102	2.22	1.34
Daylesford	0.2823	1.82	1.19
Saybrook	0.1078	1.48	1.08

In conclusion, the peaking factors for Berwyn, Daylesford and Saybrook Pump Stations during the high rain event are within the Department's current peaking factor guidelines. However, as part of its CMP program, the Authority will continue to actively pursue I/I

in the drainage areas of contributing upstream pump stations to Berwyn Pump Station, especially Devon Hunt and Exeter.

Exhibit 'J' contains the charts of peak rain event flows at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens. As related to yearly average flow, the peaking factors for the nine (9) pump stations during the rain events are as follows:

Pump Station	Yearly Avg. Flow (MGD)	Rain Events Peaking Factor	
		High	Average
Berwyn Estates	0.007	1.44	1.11
Devon Hunt	0.072	2.17	1.38
Exeter	0.009	2.74	1.39
Fox Creek	0.014	1.75	1.17
Millbrook	0.003	1.55	1.06
Newtown	0.174	2.47	1.41
Pinecroft	0.003	1.86	1.15
Spring Knoll	0.044	2.42	1.46
The Greens	0.021	1.35	1.10

9. INDUSTRIAL WASTES

There are no known industrial waste dischargers within Easttown Township.

10. CORRECTIVE ACTION PLAN

The Department mandated the Authority to develop a CMP/CAP in December 2010. ARRO Consulting, Inc. prepared a Capacity Management Plan (CMP) and an associated Strategic I/I Reduction Plan, which collectively makes up the Corrective Action Plan (CAP) that sets forth the actions the Authority would take to reduce overloads and provide additional capacity in its sanitary sewer system. The CAP/CMP that was submitted to PADEP by transmittal letter dated February 10, 2011 and, after minor revisions, was approved by PADEP by letter, dated October 25, 2011.

All of Easttown's CAP milestone work within the Berwyn Pump Station and Saybrook Pump Station drainage areas is complete. The CAP milestone work at Daylesford Pump Station, including the Sharp's Woods gravity and force main, is complete. The Valley

Creek Trunk Sewer gravity system upgrade in Tredyffrin Township and the Wilson Road Force Main Rehabilitation, into which flow the effluent from Berwyn Pump Station and Saybrook Pump Station, are also complete.

An Act 537 Special Study was prepared for the Township to establish the average annual capacities for the Township's pump stations. The Act 537 Special Study was submitted in October 2020. PADEP submitted comments in November 2020 and responses to the comments were submitted in December 2020. Final PADEP approval of the study was received by letter, dated January 11, 2021.

ARRO recently submitted Water Quality Management (WQM) Permit Applications for the Berwyn, Daylesford, Devon Hunt, Newtown and Spring Knoll Pumping Stations at the request of the Department relative to the Authority's request to turn each of these pumping stations up to full pumping capability. With the submission of the WQM Permit Applications, completion of CAP milestone work and Department approval of the Act 537 Special Study, and based on the measured flow in 2020 as discussed herein, Easttown respectfully requests to be released from the CAP/CMP requirements for the Daylesford Pumping Station, Saybrook Pumping Station and VFSA Unmetered drainage areas as identified in the Exhibit C *Easttown Township Approved and Projected Connections* map contained in this report. Easttown is embarking on a broad scope I/I project in 2021, and assuming the intended results are achieved, will be requesting to be released from the CAP/CMP in the Berwyn Pumping Station drainage area and its subdrainage areas in the 2021 Chapter 94 Report.

11. CALIBRATION REPORTS

The flow meters at Berwyn, Daylesford and Saybrook Pump Stations were calibrated during 2020. Copies of the calibration reports are included in Exhibit 'K'.

EXHIBITS

Exhibit A

Easttown Municipal Authority

Past & Present Hydraulic Loading Data

Table 1

TABLE 1

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING DATA (MGD)
2016 - 2020

Month	2016	2017	2018	2019	2020	2020 Rainfall (in.)
January	1.049568	0.966575	0.869454	1.875846	1.211785	3.23
February	1.554747	0.911219	1.219988	1.687558	1.298683	2.65
March	1.281880	0.966853	1.440283	1.861268	1.284201	4.45
April	1.101526	1.157713	1.301480	1.404904	1.507989	5.92
May	1.175391	1.116036	1.292485	1.435977	1.337310	2.84
June	0.981711	0.974413	1.316415	1.432152	1.204028	2.87
July	0.859479	0.879162	1.066002	1.371074	1.142099	8.61
August	0.810786	0.816475	1.197483	1.101469	1.271304	9.37
September	0.787647	0.760021	1.534737	0.927255	1.045891	2.48
October	0.790326	0.765258	1.309936	0.909008	1.080144	4.19
November	0.799209	0.799465	1.761154	0.988588	1.281834	5.95
December	0.931850	0.796040	1.777788	1.204795	1.735651	6.50
Average Annual Flow (MGD)	**1.010343**	**0.909103**	**1.340600**	**1.349991**	**1.283410**	
					Total	**59.06**
Max. 3 Month Ave. Flow (MGD)	**1.312718**	**1.082721**	**1.616293**	**1.808224**	**1.376500**	
PEAKING FACTOR						
Max. 3 Month Ave. Flow / Ave. Annual Flow	**1.300**	**1.190**	**1.210**	**1.340**	**1.070**	

Flow Peaking Factor:	
Average 5 Year Ratio	**1.222**

Jan - Dec 2020: Rain Data from USGS Site 01473169 Valley Creek near Valley Forge.

Exhibit B

Easttown Municipal Authority

Past, Present & Projected

EDUs, Flows and Organic Loadings

Table 2 & Table 3 and Graph 1 & Graph 2

TABLE 2

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING DATA (lbs/Day)
2016 - 2020

Month	2016	2017	2018	2019	2020
January	1,970	1,814	1,632	3,520	2,274
February	2,917	1,710	2,289	3,167	2,437
March	2,405	1,814	2,703	3,493	2,410
April	2,067	2,172	2,442	2,636	2,830
May	2,206	2,094	2,425	2,695	2,509
June	1,842	1,828	2,470	2,687	2,259
July	1,613	1,650	2,000	2,573	2,143
August	1,521	1,532	2,247	2,067	2,386
September	1,478	1,426	2,880	1,740	1,963
October	1,483	1,436	2,458	1,706	2,027
November	1,500	1,500	3,305	1,855	2,405
December	1,749	1,494	3,336	2,261	3,257
Average Annual BOD (lbs/Day)	**1,896**	**1,706**	**2,516**	**2,533**	**2,408**
Max. 1 Month BOD5 Loading (lbs/Day)	**2,917**	**2,172**	**3,336**	**3,520**	**3,257**
RATIO: Max. 1 Month BOD5 / Ave. Annual BOD5	**1.54**	**1.27**	**1.33**	**1.39**	**1.35**

Organic Peaking Factor: Average 5 Year Ratio	**1.38**

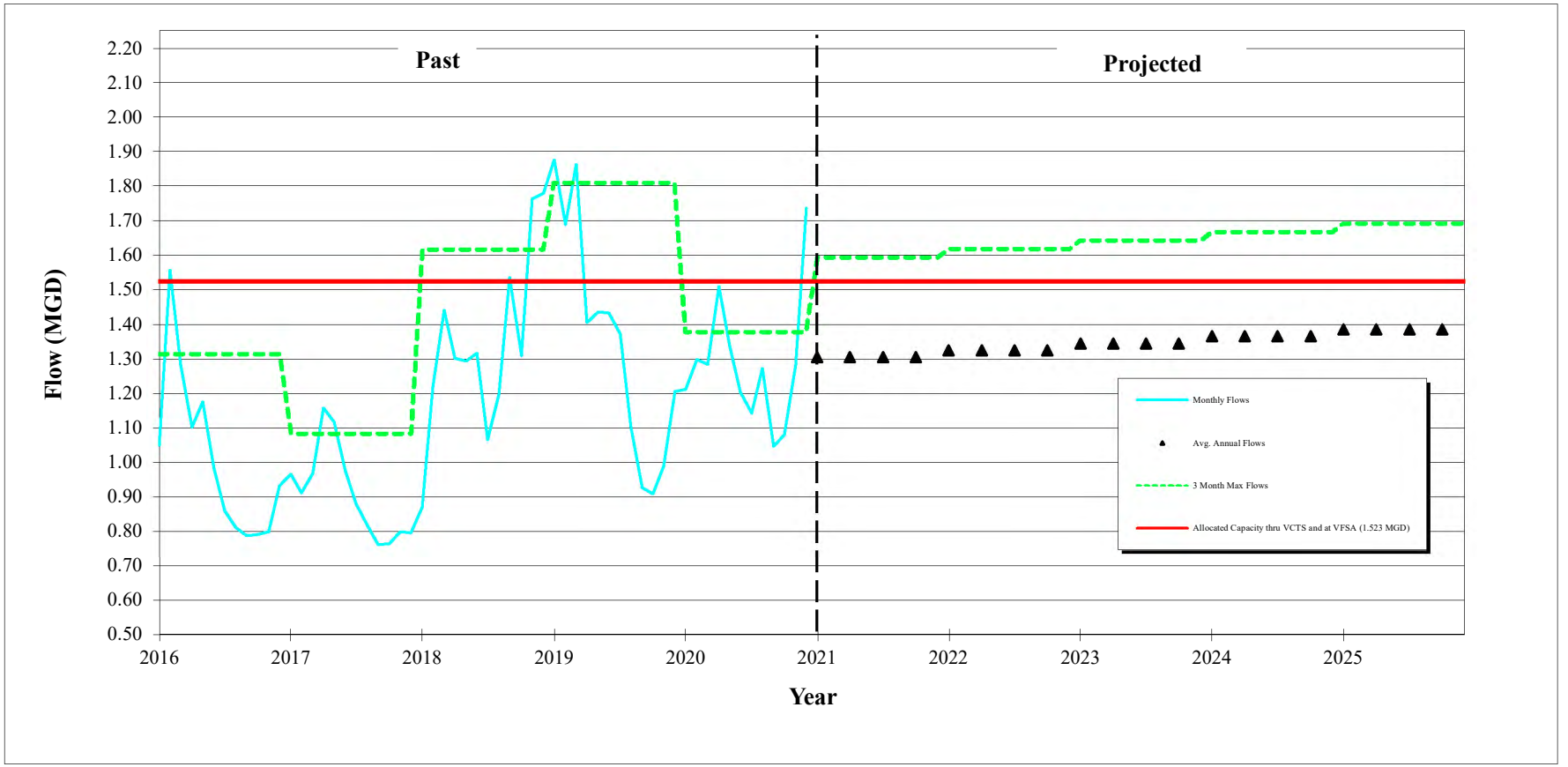
TABLE 3

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
PAST AND PROJECTED LOADINGS

Year	EDUs	Connected Population	Average Total Flow (mgd)	Max. 3 Month Ave. Flow (mgd)	Per Capita Flow (gpcd)	Average Total BOD5 (lbs/day)	Per Capita BOD5 (lbs/day)
2016	3,786.7	10,918	1.010	1.31	93	1,896	0.174
2017	3,804.7	10,959	0.909	1.08	83	1,706	0.156
2018	3,841.7	10,999	1.341	1.62	122	2,516	0.229
2019	3,850.7	11,040	1.350	1.81	122	2,533	0.229
2020	3,857.4	11,040	1.283	1.38	116	2,408	0.218
Average		**10,991**	**1.179**		**107**	**2,212**	**0.201**
Projected Loadings							
2021	3,917.9	11,213	1.304	1.59	116	2,255	0.201
2022	3,978.4	11,386	1.324	1.62	116	2,290	0.201
2023	4,038.9	11,559	1.344	1.64	116	2,325	0.201
2024	4,099.4	11,732	1.364	1.67	116	2,360	0.201
2025	4,159.9	11,906	1.384	1.69	116	2,395	0.201

GRAPH - #1

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING



GRAPH - #2

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING

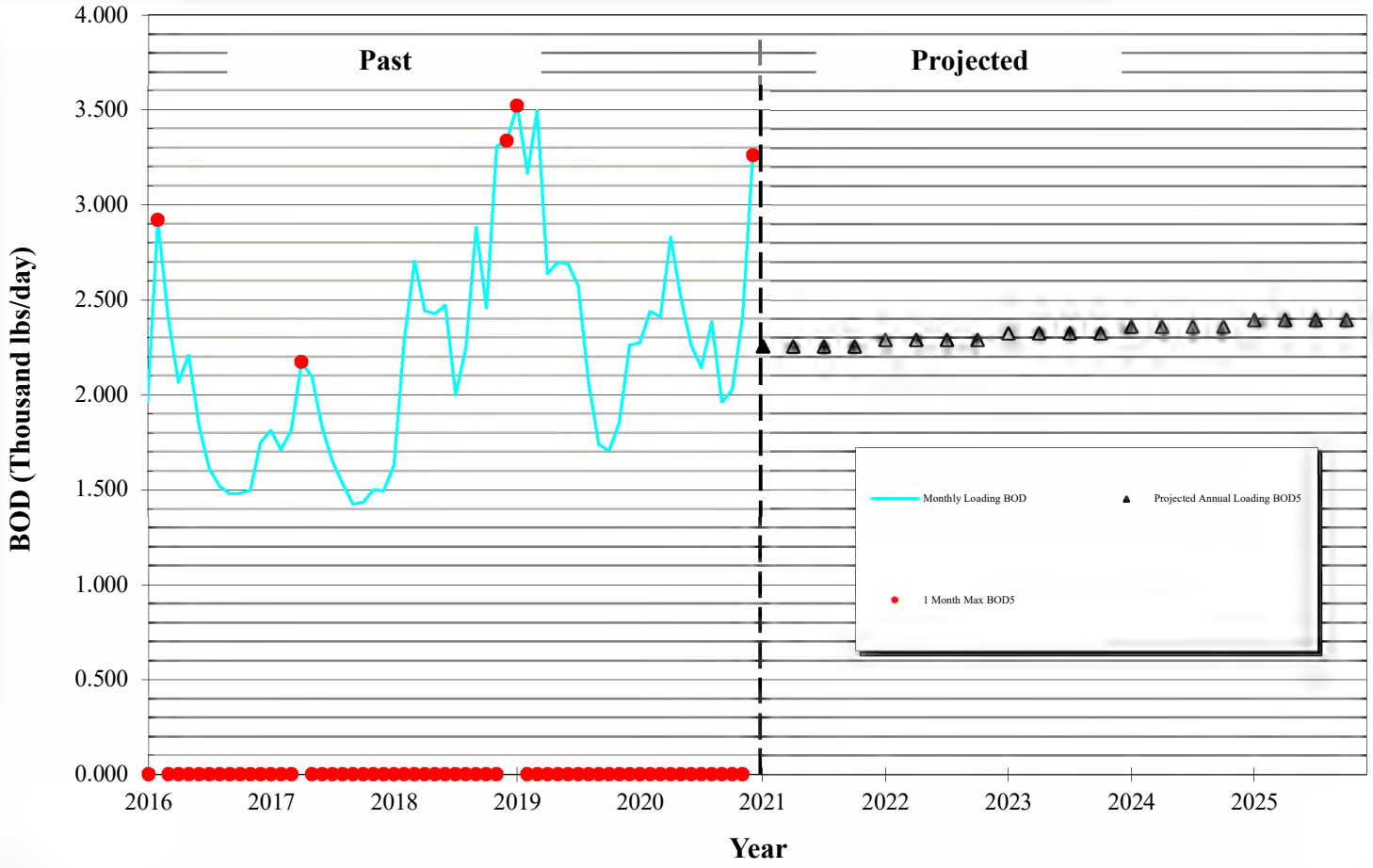


Exhibit C

Easttown Township

Approved and Projected Connections

EASTTOWN TOWNSHIP

APPROVED and PROJECTED EDU TRACKING LIST

Map ID	Development Name	Development Address	Development Tax Parcel	Total EDUs Approved	Total EDUs Connected Thru 2020	Approved EDUs Already Connected Thru 2020	Potential EDUs Connected 2020 - 2021	Potential EDUs Connected 2021 - 2040	Total Potential EDUs Connected 2020 - 2040	Total EDUs 2040
Berwyn Estates Pump Station Drainage Area					**42.00**	0.00	0.00	11.00	**11.00**	**53.00**
-	Projected/Potential Connections					0.00	0.00	11.00		
-	Miscellaneous EDUs							0.00		
Berwyn Pump Station Drainage Area					**1,524.10**	4.00	57.00	286.91	**343.91**	**1,868.01**
M	Boathouse Realty Assoc. (222 Waterloo Rd)	220 Berkley Avenue	55-3J-64.4	5.00		4.00	1.00			
M	Boathouse Realty Assoc. (222 Waterloo Rd)	216 Waterloo Road	55-3J-64.5	1.00		0.00	1.00			
M	Boathouse Realty Assoc. (222 Waterloo Rd)	210 Berkley Avenue	55-3J-64.6	1.00		0.00	1.00			
N	SD 498/Gersbach	207 S. Waterloo Road	55-3J-70.1	1.00		0.00	1.00			
U	Denise Lehmann & Andrew Holder	13 Woodside Avenue	55-2L-179	1.00		0.00	1.00			
W	Midland Ave. Development, LLC	4 Midland Ave.	55-2G-43	16.00		0.00	16.00			
-	John & Patricia Imbesi 2016 Children's Trust	1060 Newtown Road	55-5-30	12.00		0.00	12.00			
-	Stonehaven Homes (Armstrong)	218 Francis Avenue	55-2H-107	12.00		0.00	12.00			
-	Ted Babby	28 South Fairfield	55-3J-23	1.00		0.00	1.00			
-	Bison Head Partners	749 First Avenue	55-2L-123	1.00		0.00	1.00			
-	Purdy Investment Partners, L.P.	218 Berkley Avenue	55-3J-64.8	1.00		0.00	1.00			
-	Daniel & Susan Schuller	200 Church Road	55-5B-73	1.00		0.00	1.00			
-	Keech Property	501 S. Waterloo Road	55-3P-5	1.00		0.00	1.00			
-	Ludin White LLC	729 First Avenue	55-2L-139.1	3.00		0.00	3.00			
-	Daggett Property	500 S. Waterloo Road	55-3-54	4.00		0.00	4.00			
-	**Projected/Potential:** Berwyn Village (Mack Oil)	50 Price Avenue	55-2G-10					12.00		
-	**Projected/Potential:** Fritz Lumber	631 Lancaster Avenue	55-2G-5					75.00		
-	**Projected/Potential:** Handel's Redevelopment	576 Lancaster Avenue	55-2G-42					29.00		
-	**Projected/Potential:** Other Connections							**159.91**		
-	Miscellaneous EDUs							**11.00**		
Darby Pump Station Drainage Area					**139.50**	0.00	4.00	17.00	**21.00**	**160.50**
-	Projected/Potential Connections			128.17		0.00	4.00	17.00		
-	Miscellaneous EDUs							0.00		
Daylesford Pump Station Drainage Area					**672.20**	0.00	7.00	15.37	**22.37**	**694.57**
-	Kelly Group Builders, Inc.	2291 S. Valley Road	54-04-0008	4.00		0.00	4.00			
-	Moser Land Development	616 Leopard Road	55-4-55	1.00		0.00	1.00			
-	Moser Land Development	616 Leopard Road	55-4-55	1.00		0.00	1.00			
-	Rahr Property	549 Morris Lane	55-4-66.7	1.00		0.00	1.00			
-	Projected/Potential Connections							**15.37**		
-	Miscellaneous EDUs							**0.00**		
Devon Hunt Pump Station Drainage Area					**173.10**	0.00	3.00	55.74	**58.74**	**231.84**
B	Lewis Subdivision	120 South Devon Avenue	55-3-63.1	3.00		0.00	3.00			
-	Projected/Potential Connections							55.74		
-	Miscellaneous EDUs							0.00		
Exeter Pump Station Drainage Area					**32.20**	4.00	5.00	3.00	**8.00**	**40.20**
D	Hill Custom Homes	550 Waterloo Avenue	55-3-43	8.00		4.00	4.00			
I	Keyes	393 Church Road	55-5-55	1.00		0.00	1.00			
-	Projected/Potential Connections							3.00		
-	Miscellaneous EDUs							0.00		
Fox Creek Pump Station Drainage Area					**44.60**	0.00	0.00	1.00	**1.00**	**45.60**
-	Projected/Potential Connections						0.00	1.00		
-	Miscellaneous EDUs							0.00		
Millbrook Pump Station Drainage Area					**36.00**	0.00	0.00	0.00	**0.00**	**36.00**
-	Projected/Potential Connections					0.00	0.00	0.00		
-	Miscellaneous EDUs							0.00		
Newtown Pump Station Drainage Area					**395.60**	6.00	4.00	55.00	**59.00**	**454.60**
A	South Leopard Road Associates***			9.00		5.00	4.00			
-	Tim and DeDe Veale	1220 S. Leopard Rd	55-4-118.2A	1.00		1.00	0.00			
-	Projected/Potential Connections							54.00		
-	Miscellaneous EDUs							1.00		
Pinecroft Pump Station Drainage Area					**17.00**	1.00	0.00	0.00	**0.00**	**17.00**
-	William & Kathy Crager	2040 Buttonwood Rd	55-4-184.1	1.00		1.00	0.00			
-	Projected/Potential Connections							0.00		
-	Miscellaneous EDUs							0.00		
Saybrook Pump Station Drainage Area					**328.10**	0.00	5.00	6.00	**11.00**	**339.10**
T	Alessandra Nicolas	49 Walnut Av.	55-2L-29	2.00		0.00	2.00			
-	Mary Nixon	1135 Sugartown Road	55-2-143	3.00		0.00	3.00			
-	**Projected/Potential:** Benson Homes & Development	15 Leopard Road	55-2L-11					0.00		
-	Projected/Potential Connections							6.00		
-	Miscellaneous EDUs							0.00		
Spring Knoll Pump Station Drainage Area					**225.00**	0.00	12.00	24.00	**36.00**	**261.00**
-	John & Patricia Imbesi	1016 Newtown Rd	55-5-30	12.00		0.00	12.00			
-	Projected/Potential Connections							6.00		
-	Miscellaneous EDUs							18.00		
The Greens Pump Station Drainage Area					**116.00**	0.00	0.00	14.00	**14.00**	**130.00**
-	Projected/Potential Connections						0.00	14.00		
-	Miscellaneous EDUs							0.00		
VFSA Unmetered Drainage Area					**112.00**	0.00	3.00	23.00	**26.00**	**138.00**
F	Peter A. Talman	435 Conestoga Road	55-2H-49	1.00		0.00	1.00	0.00		
-	YMCA	Berwyn Paoli Road		2.00		0.00	2.00	0.00		
-	Projected/Potential Connections							23.00		
-	Miscellaneous EDUs							**0.00**		
		VFSA Total EDUs =		**239.17**	**3,857.40**	**15.00**	**100.00**	**512.02**	**612.02**	**4,469.42**
		VFSA Metered EDUs =			**3,605.90**	**15.00**	**93.00**	**472.02**	**565.02**	
		VFSA Unmetered EDUs =			**251.50**	**0.00**	**7.00**	**40.00**	**47.00**	
RHM Unmetered Drainage Area					**81.10**		0.00	3.00	**3.00**	**84.10**
-	Projected/Potential Connections						0.00	3.00		
-	Miscellaneous EDUs							0.00		
		RHM Unmetered Subtotal EDUs =		**0.00**	**81.10**		**0.00**	**0.00**	**0.00**	**84.10**
Trout Run Unmetered Drainage Area					**176.40**		0.00	2.00	**2.00**	**178.40**
-	Projected/Potential Connections						0.00	2.00		
-	Miscellaneous EDUs							0.00		
		Trout Run Unmetered Subtotal EDUs =		**0.00**	176.40		**0.00**	**0.00**	**0.00**	178.40
		Grand Total EDUs =		**239.17**	**4,114.90**		**100.00**	**512.02**	**612.02**	**4,731.92**

EASTTOWN TOWNSHIP

APPROVED AND PROJECTED CONNECTIONS

Darby PS

Note: Darby PS owned and operated by Tredyffrin Township.

VFSA Unmetered

Saybrook PS

VFSA Unmetered

Station Ave Sewer PS (Owned and Operated by Tredyffrin)

Trout Run PS

Tredyffrin Township

Daylesford PS

The Greens PS

Berwyn PS

Newtown PS

Fox Creek PS

Pinecroft PS

Spring Knoll PS

Berwyn Estates PS

Millbrook PS

Exeter PS

RHM

Devon Hunt PS

Willistown Township

Newtown Township (Delaware County)

Radnor Township (Delaware County)

Chester County

Delaware County

LEGEND

- Manhole
- Air Release Valve
- Grinder Pump
- Gate Valve
- Sampling Meter Pit
- Pump Station
- Private Gravity Sewer
- Gravity Sewer
- Force Main
- Low Pressure Sewer
- Lateral (EDU=1)
- Lateral (EDU>1)
- Drainage Basin
- Areas Flowing to RHM
- Approved Subdivisions/ Projects not Connected
- Private Sewers
- Projected Connections 2025
- Potential Connections 2035
- Municipal Boundaries

0 500 1,000

Feet

1 inch = 500 feet

NOTES:

*Please reference the "Approved and Projected EDU Tracking List" spreadsheet.

The following subdivisions/projects have been approved, but are not connected:

A. South Leopard Road Associates (south side)
B. Lewis Subdivision (Dorset & South Devon)
D. Hill Custom Homes (Mundi Property, Winfield Rd.)
E. Blackburn Farm - 1135 Sugartown Rd.
F. Chen Wang Mei-Han - 435 Conestoga Rd.
H. Thompson - Subdivision
I. Keyes - Church Road.
K. J. B. A. Properties - 34 Leopard Rd.
M. Boathouse Realty Associates, LP (222 S. Waterloo Road)
N. 207 South Waterloo Rd.
S. Corkhill
U. 13 Woodside Avenue
W. 4 Midland Avenue

Original Map Produced: January 25, 2011
Revised Date: March 9, 2021

ARRO

Exhibit D

Easttown Municipal Authority

Flow Information for Each Pump Station

EXHIBIT - D

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
FLOW INFORMATION FOR EACH PUMPING STATION

		Pump Station Capacities						Present Flows	2-Year Projected Ann. Avg. Daily Flow			Future Projected Ann. Avg. Daily Flow		
Pumping Station Name[1]	No. of Pumps	Permit Design Capacity (gpm)	Ultimate Design Capacity (gpm)	Current Permit Peak Flow Capacity[2]	Ultimate Permit Peak Flow Capacity[2]	PADEP Peaking Factor[5]	Current Permit Annual Average Daily Flow Capacity	Actual Annual Average Daily Flow - 2020[3]	Projected Annual Average Daily Flow - 2022[4]	PADEP Peaking Factor[5]	Projected Peak Flow - 2022	Projected Annual Average Daily Flow - 2040[4]	PADEP Peaking Factor[5]	Projected Peak Flow - 2040
Berwyn	3	**920**	**1,019**	2,649,600	2,936,000	2.50	1,059,840	810,205	827,051	3.00	2,481,154	978,667	3.00	2,936,000
Berwyn Estates	2	73	73	105,120	105,120	2.50	42,048	7,058	7,243	4.20	30,420	8,907	4.20	37,407
Devon Hunt	2	**220**	**252**	316,800	362,880	2.50	126,720	71,850	74,288	3.77	280,067	96,233	3.77	362,800
Exeter	2	100	100	144,000	144,000	2.50	57,600	8,579	8,792	4.19	36,865	10,710	4.19	44,909
Fox Creek	2	50	50	72,000	72,000	2.50	28,800	13,857	13,879	4.16	57,725	14,082	4.16	58,567
Millbrook	2	40	40	57,600	57,600	2.50	23,040	3,477	3,477	4.20	14,603	3,477	4.20	14,603
Newtown	2	**550**	**690**	792,000	994,000	2.50	316,800	168,606	170,979	3.66	626,468	192,338	3.66	704,725
Pinecroft	2	32	32	46,080	46,080	2.50	18,432	3,359	3,359	4.20	14,108	3,359	4.20	14,108
Spring Knoll	2	**100**	**270**	144,000	388,800	2.50	57,600	43,619	44,221	3.93	173,610	49,635	3.93	194,869
Daylesford	2	**590**	**718**	849,600	1,033,620	2.50	339,840	282,294	283,597	3.50	992,588	295,320	3.50	1,033,620
The Greens	2	200	200	288,000	288,000	2.50	115,200	20,904	21,156	4.07	86,021	23,427	4.07	95,254
Saybrook	2	**275**	**275**	396,000	396,000	2.50	158,400	107,828	108,190	3.55	384,439	111,443	3.55	396,000

Notes:

(1) Berwyn, Daylesford and Saybrook pumping stations convey flow to the Vally Creek Trunk Sewer. The stations listed directly under those whose names are in bold type are tributary to that station whose name is in bold type.

(2) Current and Ultimate Permit Peak Flow Capacity based on one pump always on stand-by.

(3) Actual Annual Average Daily Flows are as per flow meter readings for all pumping stations.

(4) Projected Annual Average Daily flow in 2022 and at buildout (2040) is based on an interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the *Act 537 Supplement for Wilson Road Force Main*, Table 3-3, Average D

(5) PADEP Peaking Factor is interpolated from PADEP Southeast Regional Office's "Sewage Pumping Station Guidance (Rev. 3/24/99)".

(6) All flow rates above are in gallons per day (gpd).

Exhibit E

Easttown Municipal Authority

Monthly Flow Total to VFSA

Versus Rainfall - Graph

Graph 3

GRAPH - #3

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY TOTAL FLOW TO VFSA VERSUS RAINFALL

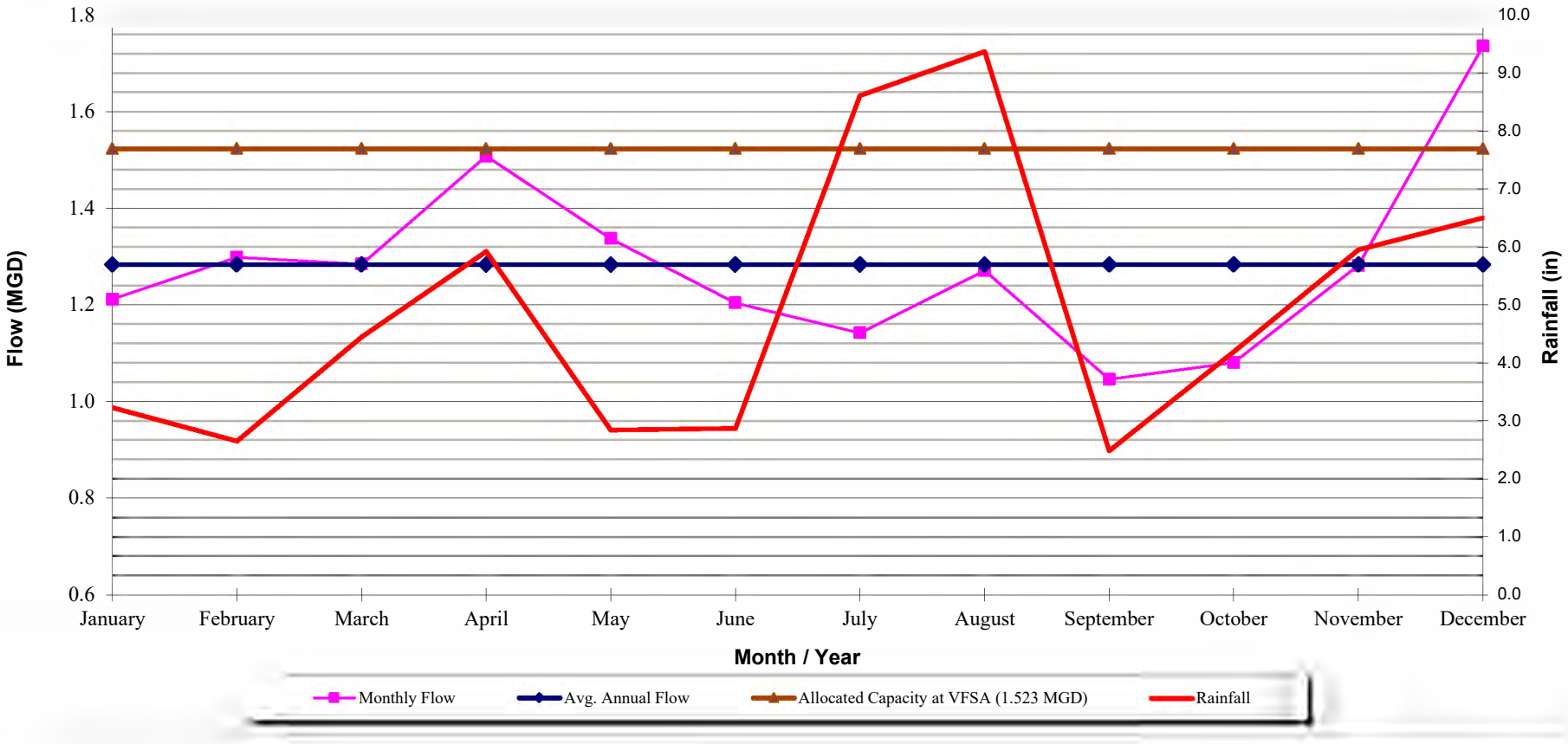


Exhibit F

Easttown Municipal Authority

Pump Stations Flow to VFSA

Versus Rainfall - Summary and Graphs

Berwyn Pump Station
Daylesford Pump Station
Saybrook Pump Station

Table 4A, Graphs 4A, 4B and 4C

Table 4A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY PUMP STATION FLOW TO VFSA

BERWYN, DAYLESFORD and SAYBROOK PUMP STATIONS

Year	Month	Monthly Flow, MGD			Rainfall
		Berwyn	Daylesford	Saybrook	
2020	January	0.7762	0.2582	0.0995	3.23
	February	0.8311	0.2826	0.1015	2.65
	March	0.8216	0.2804	0.0997	4.45
	April	0.9475	0.3409	0.1226	5.92
	May	0.8380	0.3049	0.1085	2.84
	June	0.7634	0.2604	0.1029	2.87
	July	0.7247	0.2421	0.1008	8.61
	August	0.8172	0.2566	0.1147	9.37
	September	0.6515	0.2327	0.0935	2.48
	October	0.6765	0.2378	0.0953	4.19
	November	0.7997	0.2910	0.1075	5.95
	December	1.0750	0.4000	0.1475	6.50
Avg Annual Flow (MGD) =		**0.8102**	**0.2823**	**0.1078**	

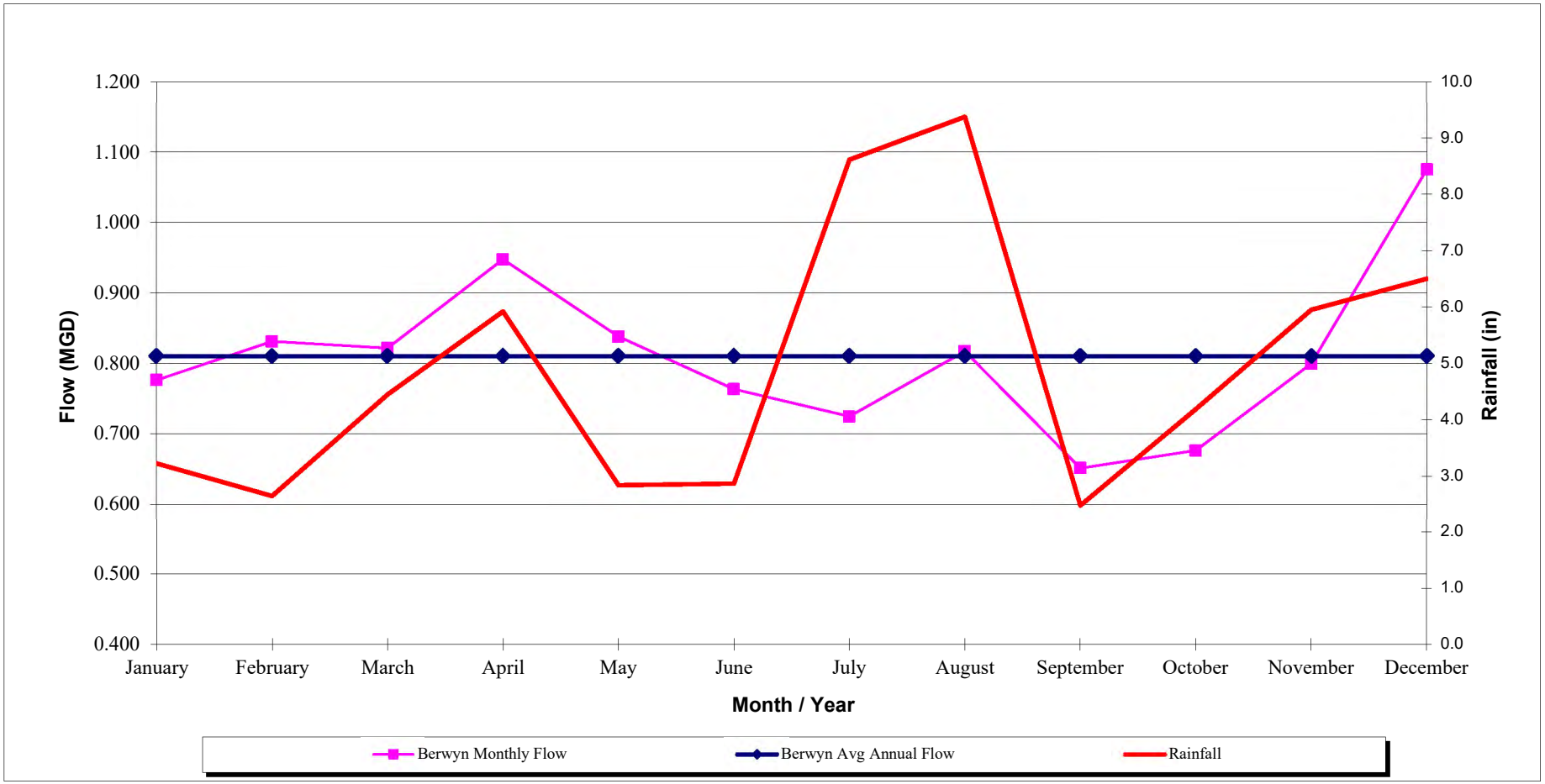
GRAPH - #4A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

BERWYN PUMP STATION



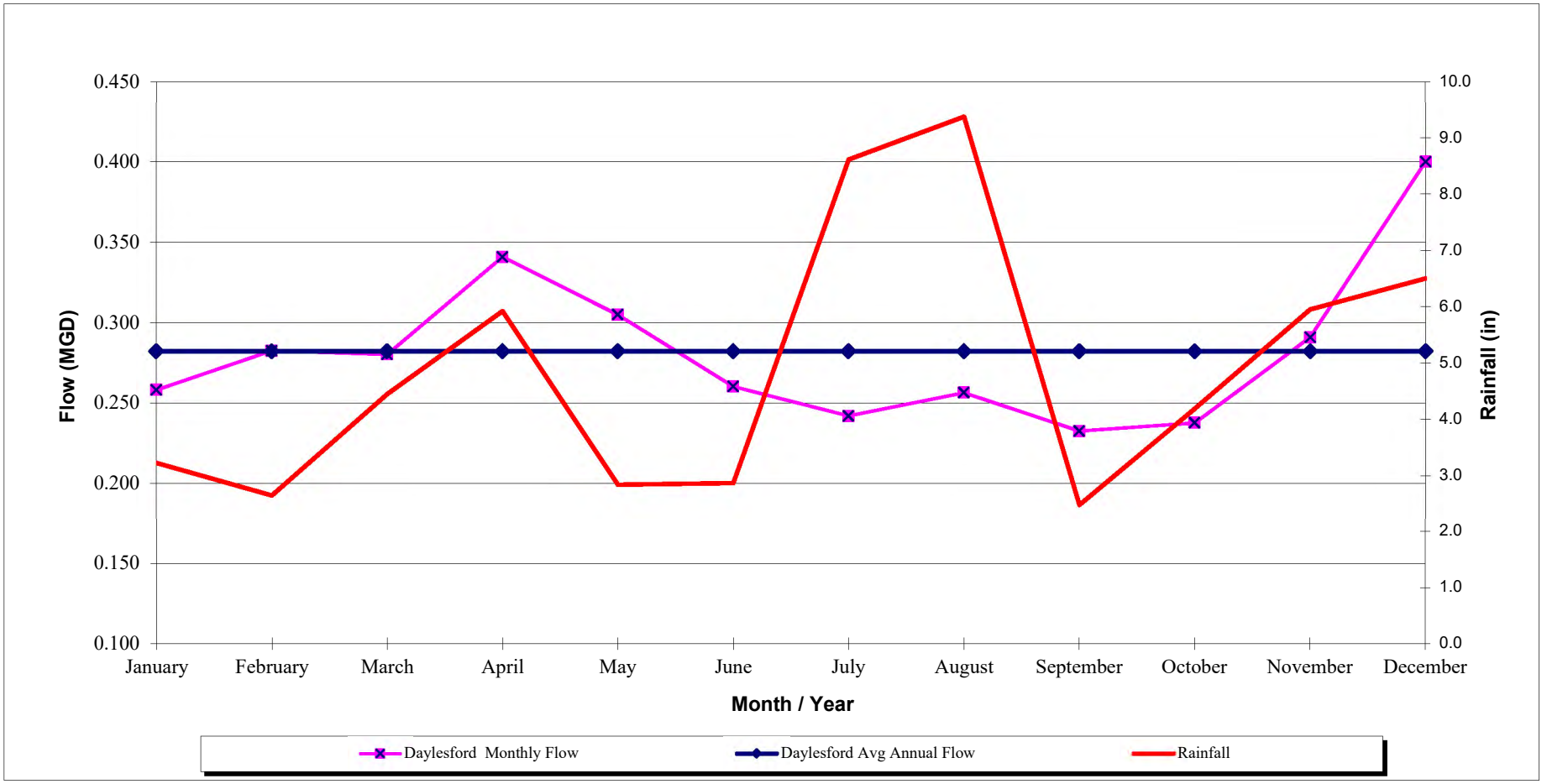
GRAPH - #4B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

DAYLESFORD PUMP STATION



GRAPH - #4C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

SAYBROOK PUMP STATION

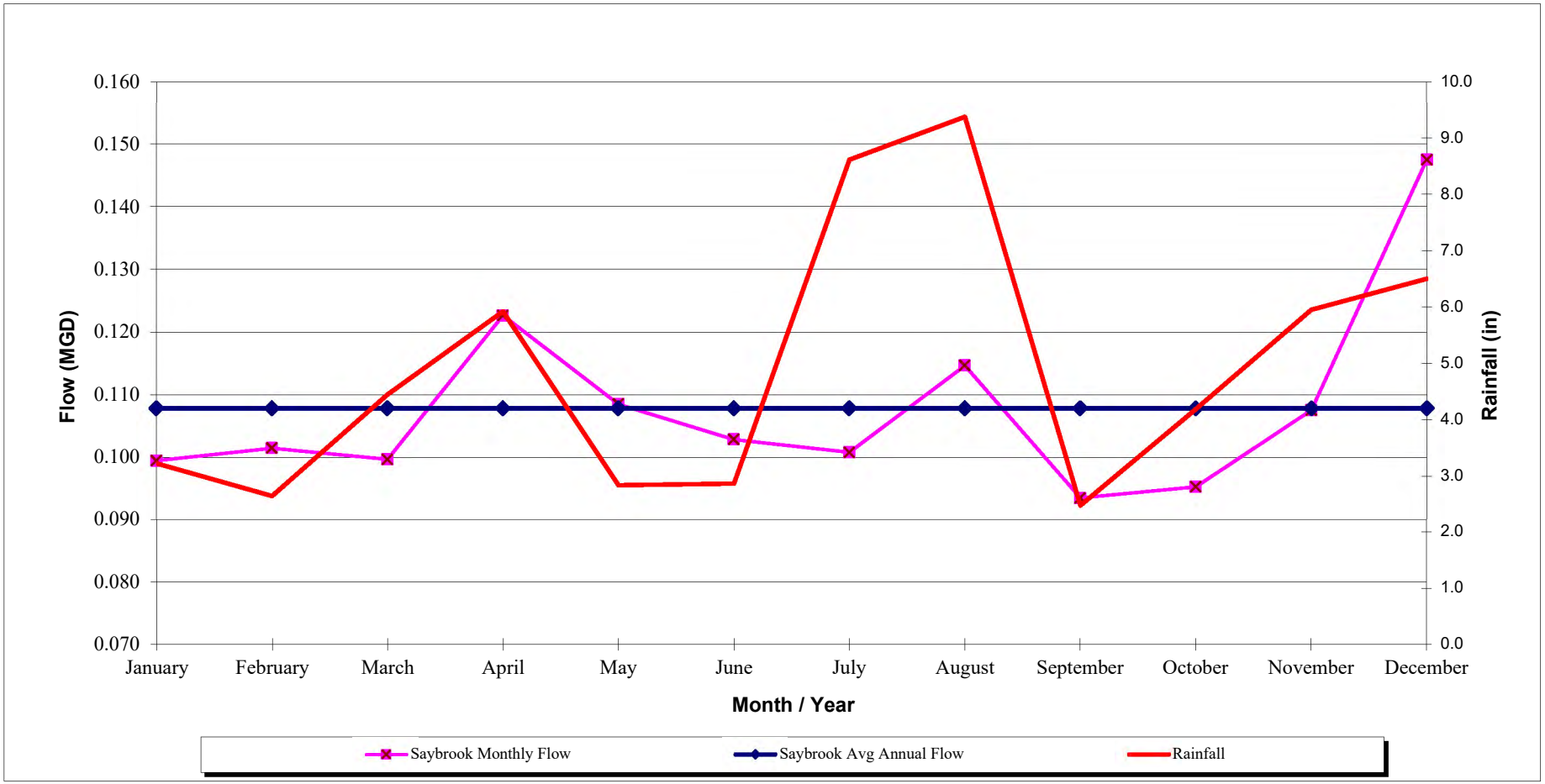


Exhibit G

Easttown Municipal Authority

Small Metered Pump Stations Flow Versus Rainfall - Summary and Graphs

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Table 4B, Graphs 4D to 4L

Table 4B

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY SATELLITE PUMP STATION FLOWS

Year	Month	Monthly Flow, GPD									Rainfall
		Berwyn Estates	Devon Hunt	Exeter	Fox Creek	Millbrook	Newtown	Pinecroft	Spring Knoll	The Greens	
2020	January	6,963	67,456	7,681	13,390	3,343	156,288	3,698	39,399	17,545	3.23
	February	6,437	69,816	8,399	12,231	3,216	156,667	3,046	38,123	17,904	2.65
	March	7,087	74,152	8,827	13,208	3,414	167,553	3,317	42,486	20,688	4.45
	April	7,688	82,773	9,833	14,413	3,812	195,559	3,316	49,138	22,216	5.92
	May	7,532	76,294	8,823	13,760	3,543	174,662	3,246	44,641	22,327	2.84
	June	7,153	70,820	8,733	12,432	3,515	161,187	2,881	42,497	21,520	2.87
	July	6,591	66,213	7,516	13,131	3,289	150,782	3,317	41,303	21,687	8.61
	August	7,050	71,510	8,773	14,893	2,883	173,387	3,844	45,270	20,459	9.37
	September	6,704	62,170	7,382	13,003	3,951	138,719	3,511	38,221	20,358	2.48
	October	6,774	64,441	6,773	13,386	3,723	146,623	3,561	39,900	21,093	4.19
	November	7,171	71,256	8,756	14,757	3,375	173,898	3,206	45,051	23,048	5.95
	December	7,542	85,295	11,455	17,685	3,663	227,943	3,369	57,398	22,005	6.50
Avg Annual Flow (GPD) =		**7,058**	**71,850**	**8,579**	**13,857**	**3,477**	**168,606**	**3,359**	**43,619**	**20,904**	

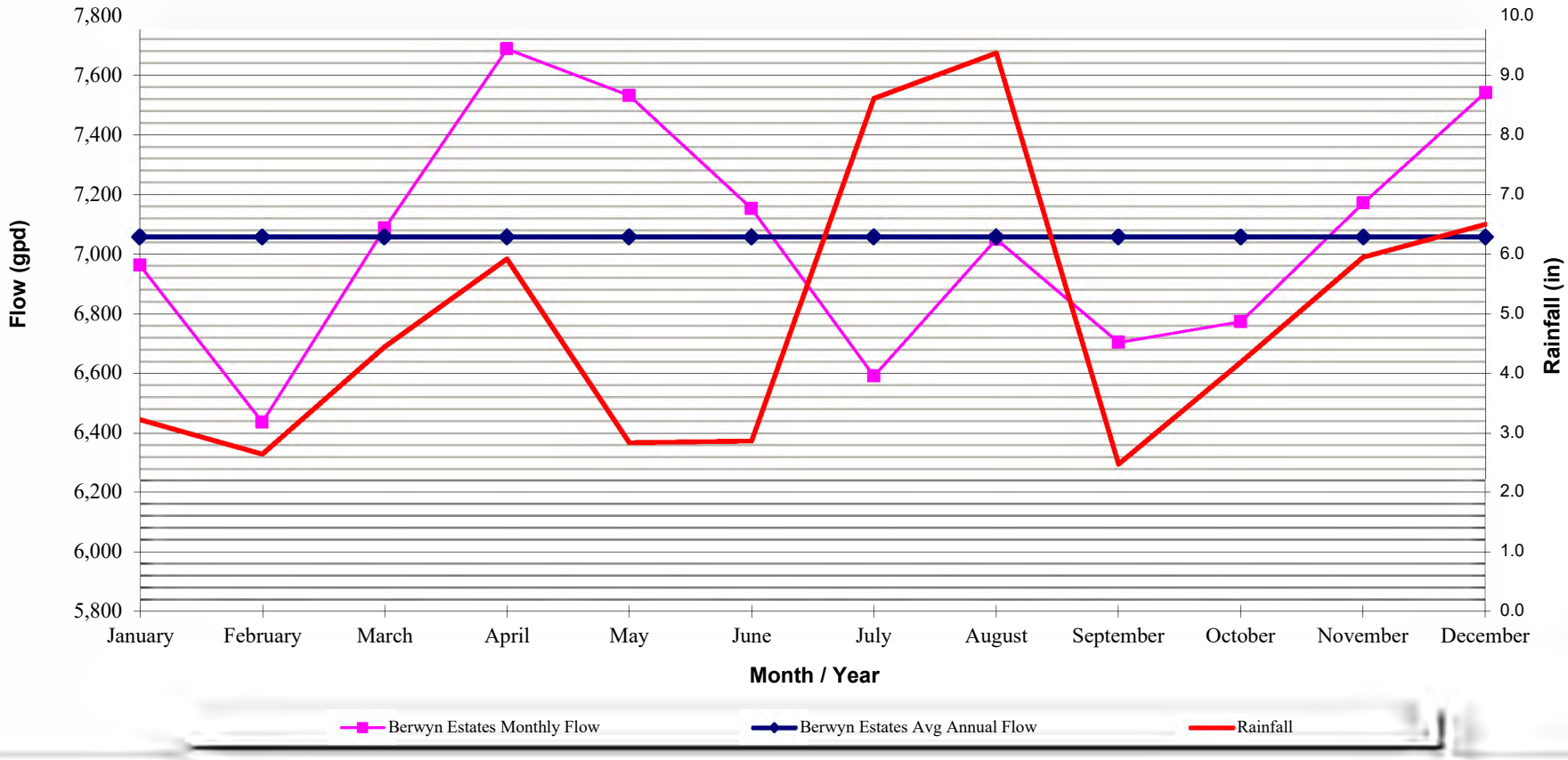
GRAPH - #4D

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

BERWYN ESTATES PUMP STATION



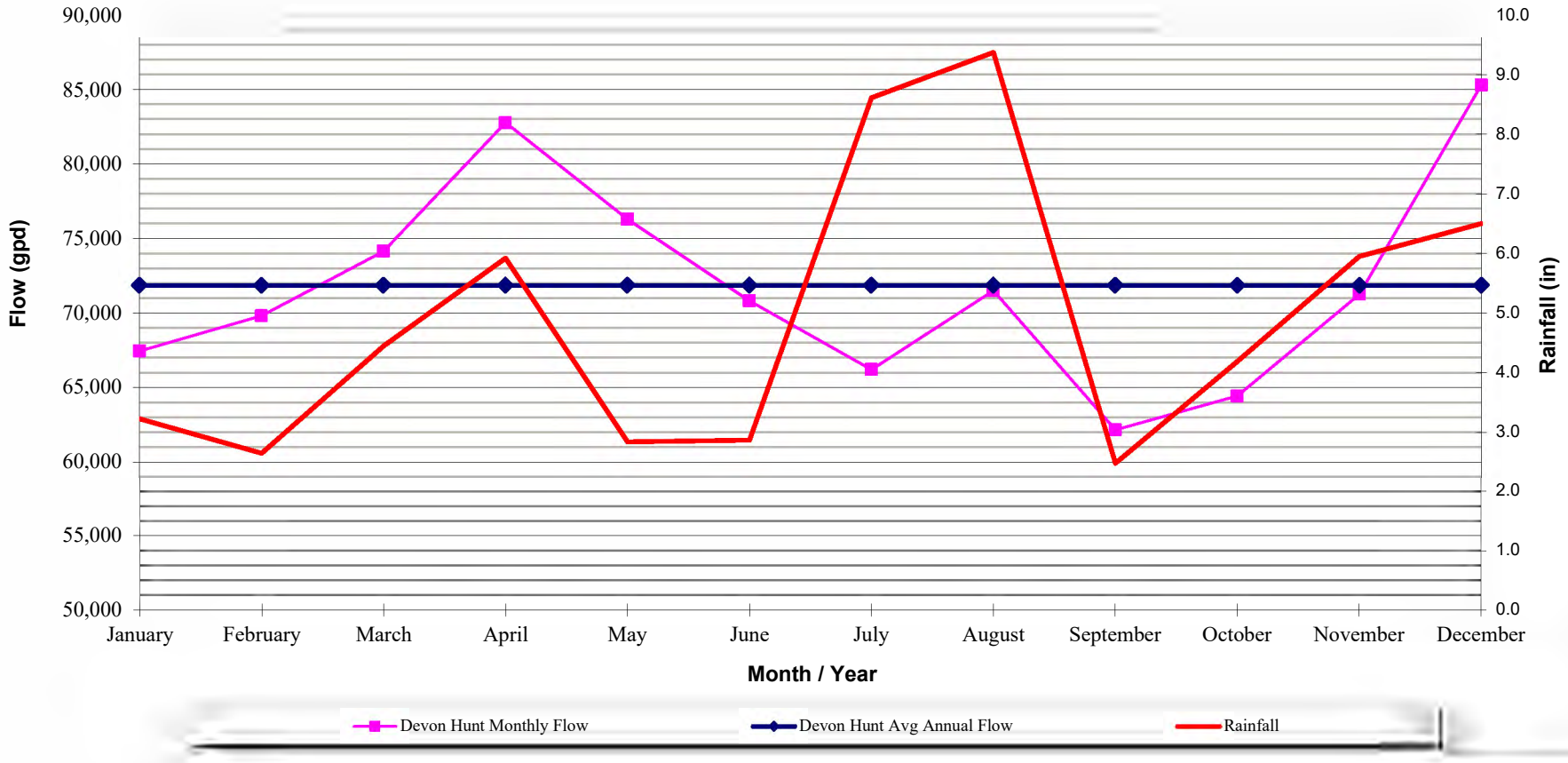
GRAPH - #4E

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

DEVON HUNT PUMP STATION



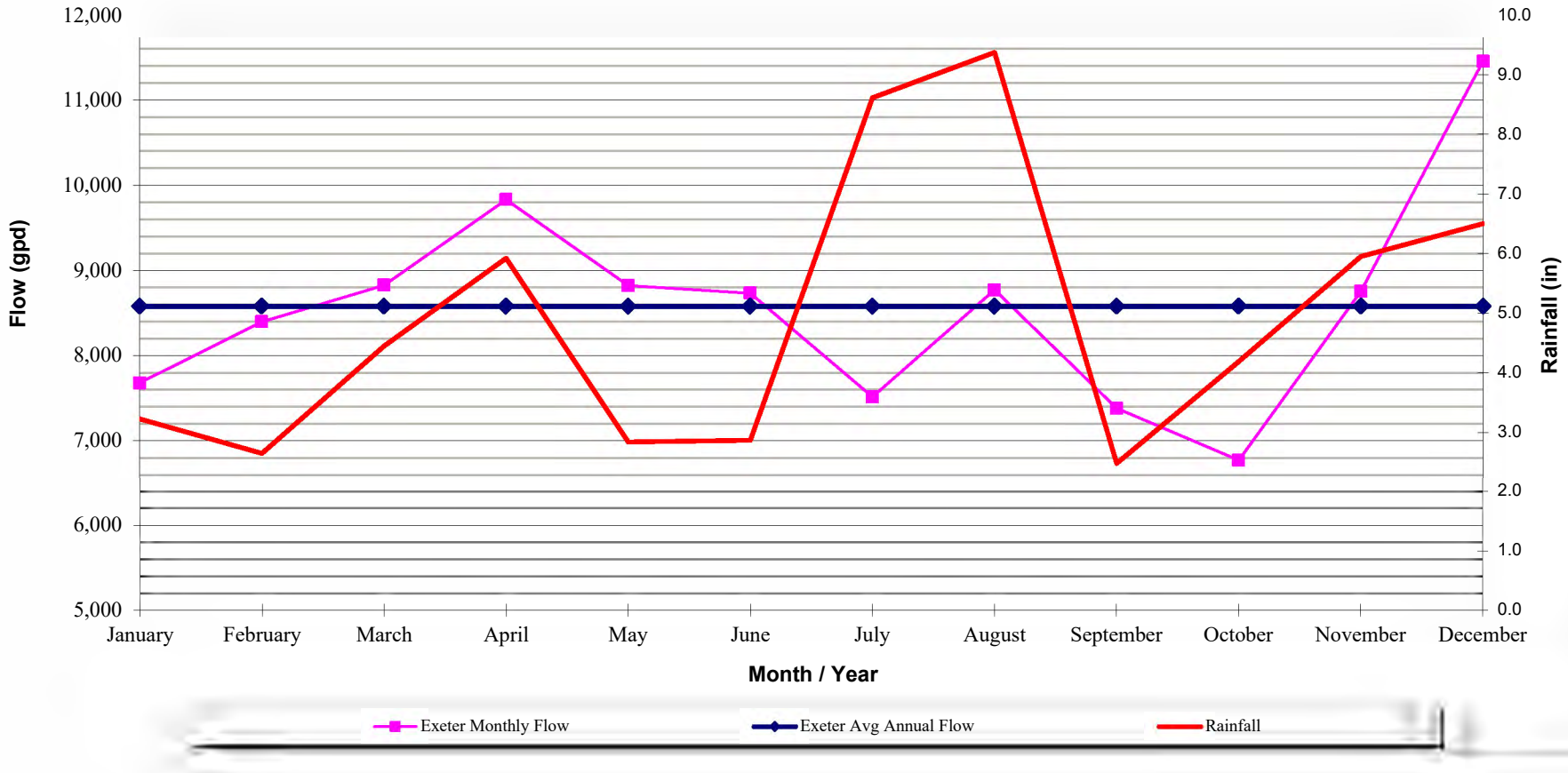
GRAPH - #4F

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

EXETER PUMP STATION



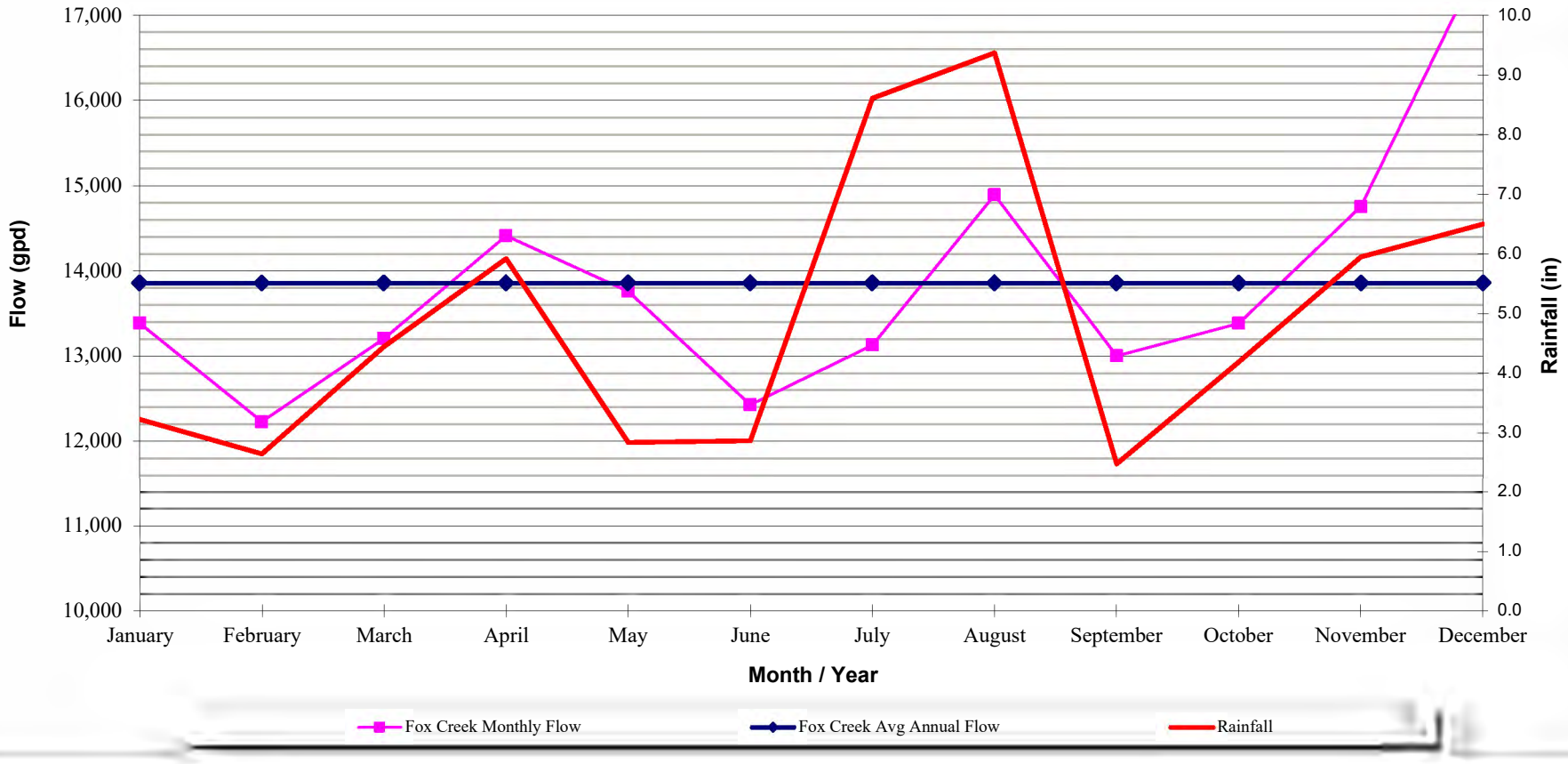
GRAPH - #4G

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

FOX CREEK PUMP STATION



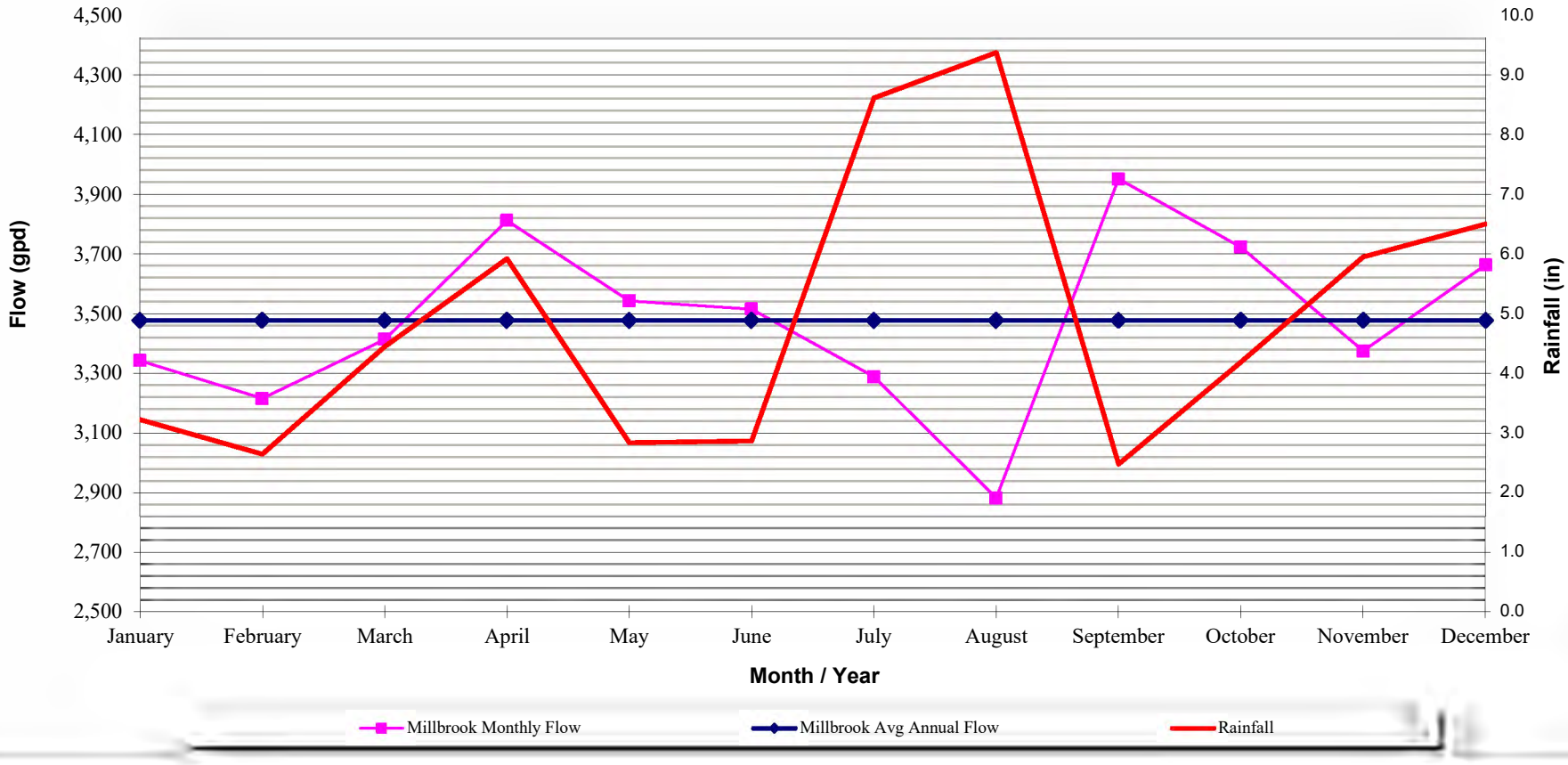
GRAPH - #4H

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

MILLBROOK PUMP STATION



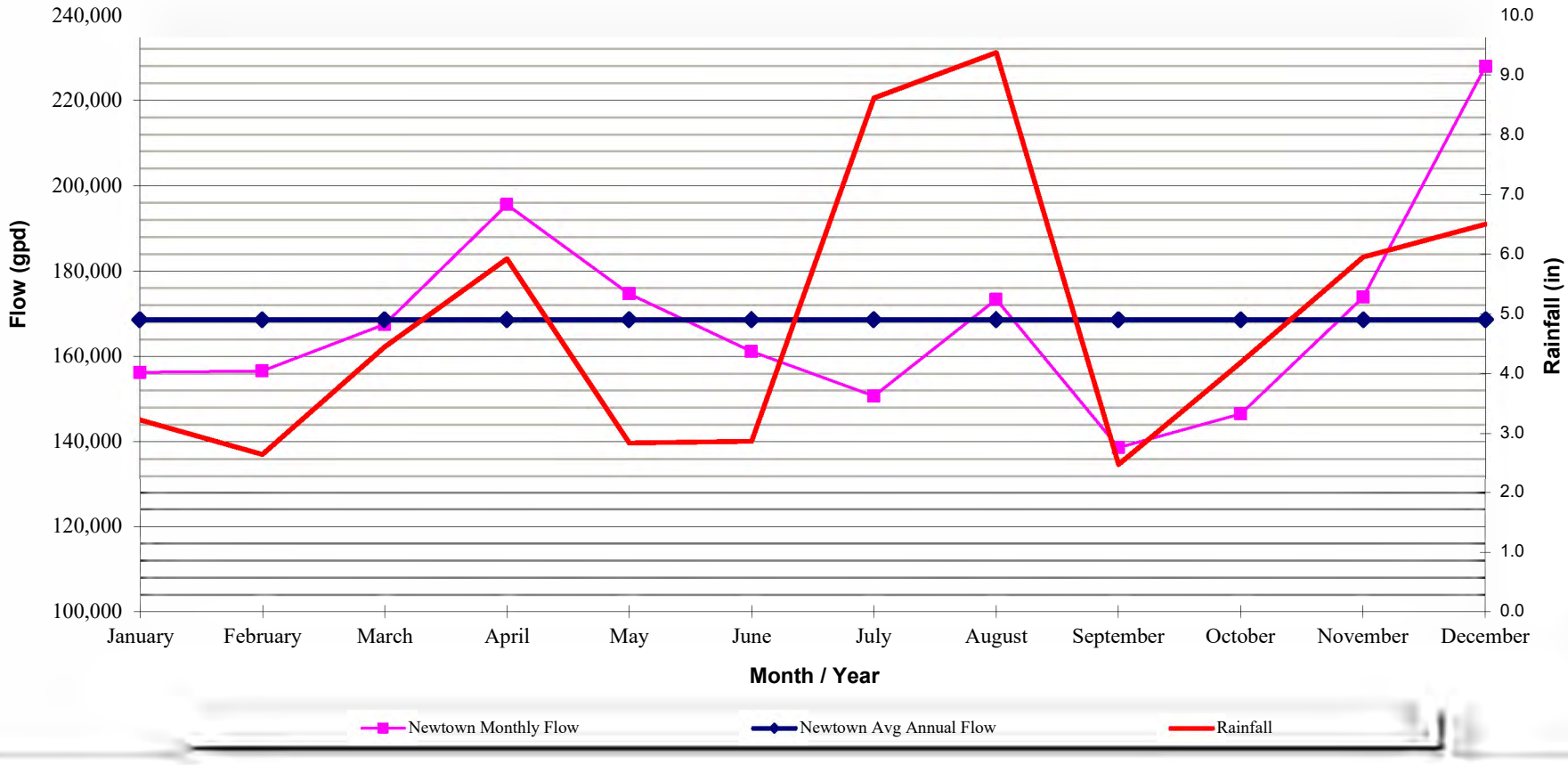
GRAPH - #4I

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

NEWTOWN PUMP STATION



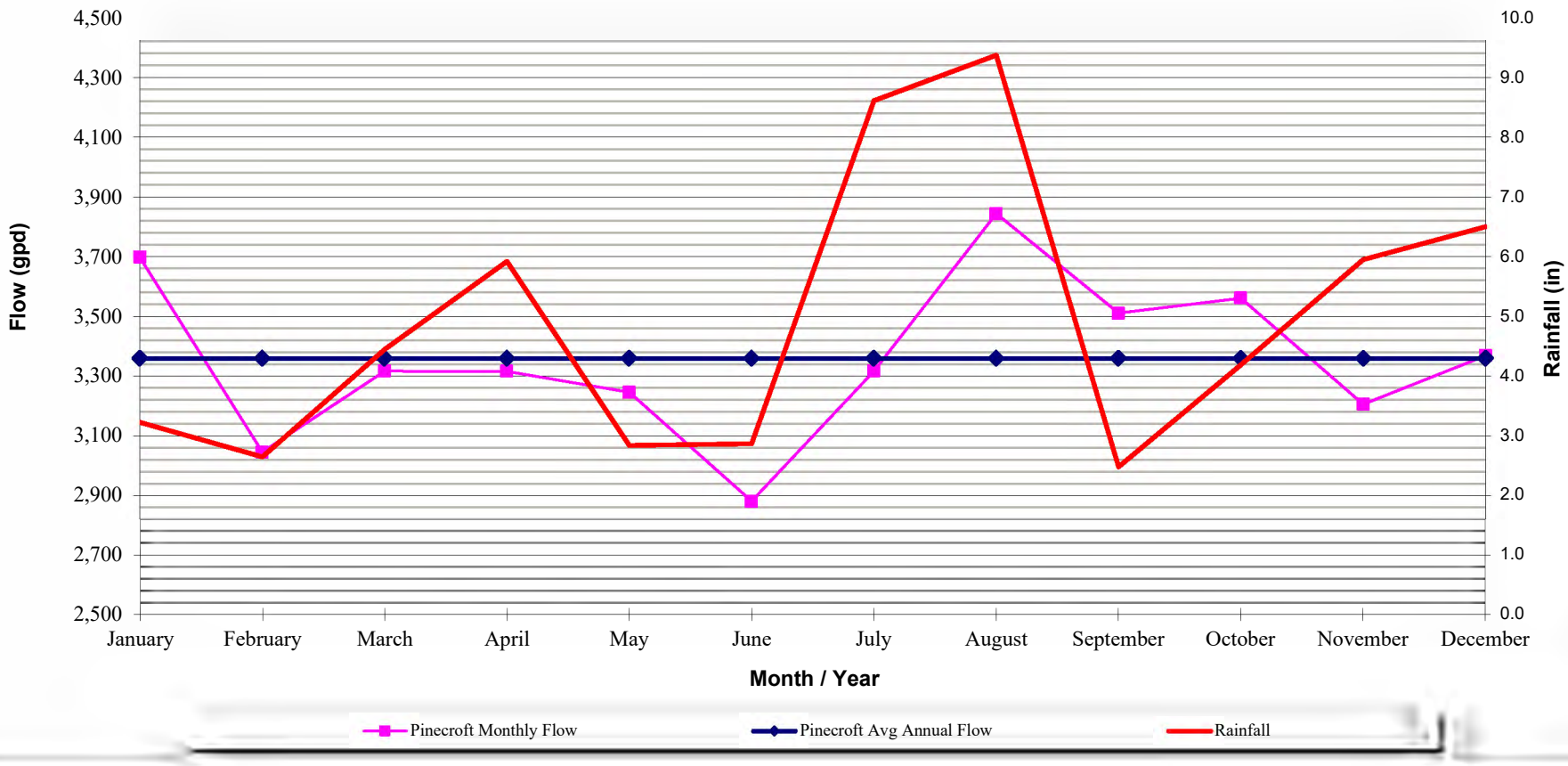
GRAPH - #4J

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

PINECROFT PUMP STATION



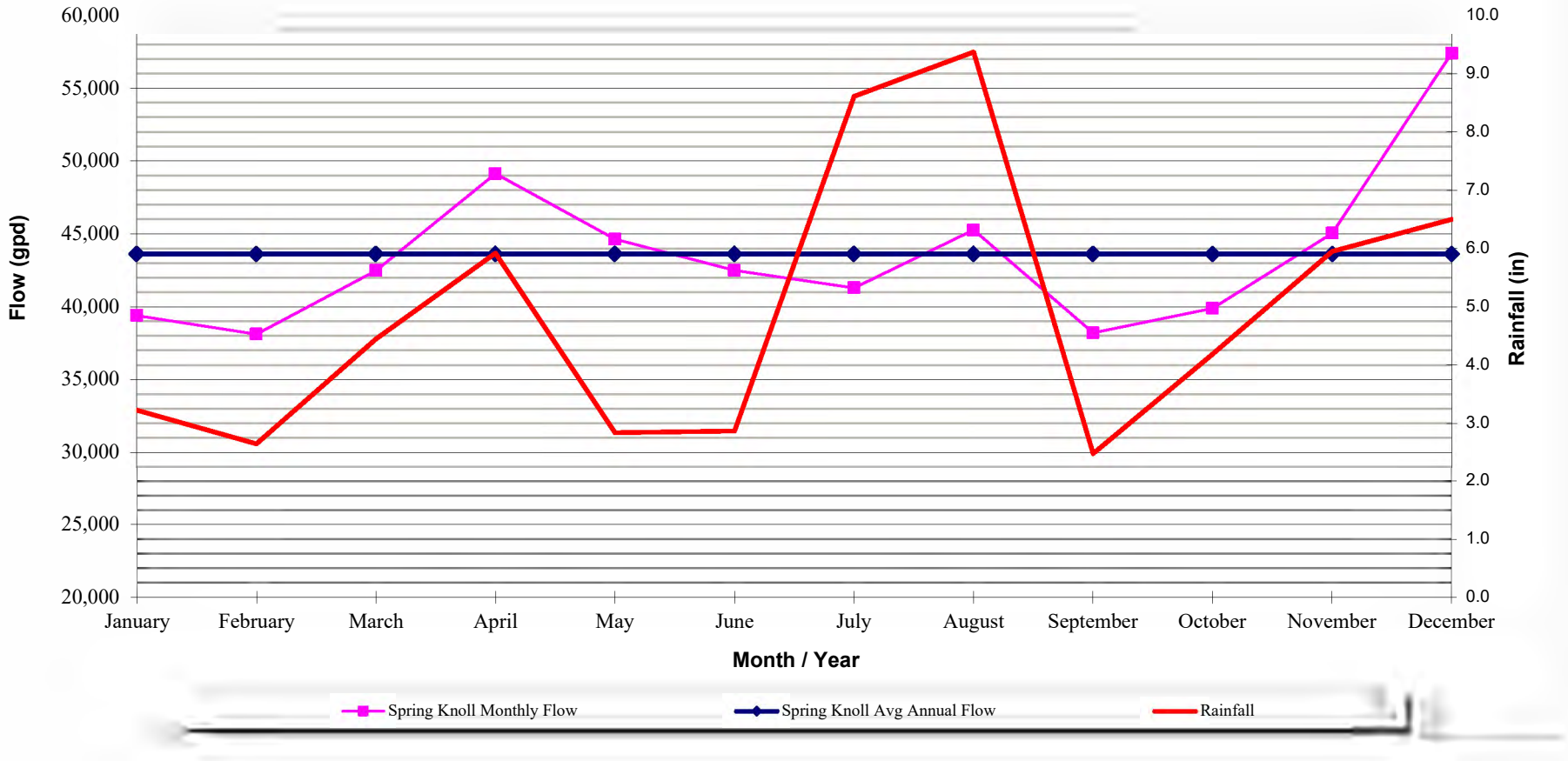
GRAPH - #4K

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

SPRING KNOLL PUMP STATION



GRAPH - #4L

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

THE GREENS PUMP STATION

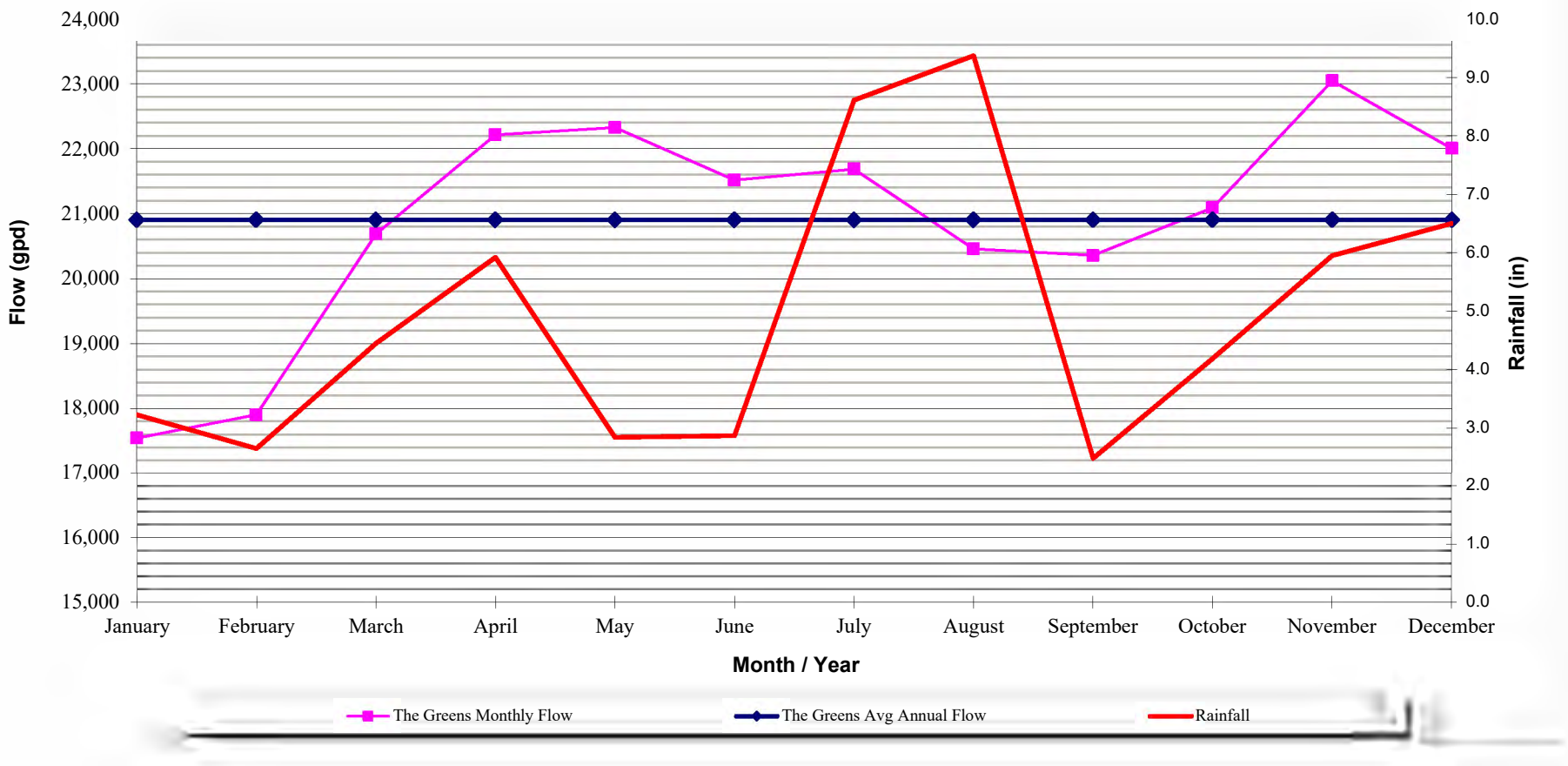


Exhibit H

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Metered Pump Stations – Summary

Berwyn Pump Station
Berwyn Estates Pump Station
Daylesford Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Saybrook Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Table 5

Table 5

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

SUMMARY OF MAXIMUM DAILY FLOW (MGD) AT METERED PUMP STATIONS

DURING DAYS WHEN RAINFALL > 1.0 INCH PER DAY

		Berwyn PS		Berwyn Estates PS		Daylesford PS		Devon Hunt PS		Exeter PS		Fox Creek PS	
Rain Date	Rain (in.)	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
01/25/20	2.21	0.689	0.85	0.010	1.44	0.216	0.76	0.071	0.98	0.010	1.15	0.012	0.88
03/28/20	1.31	1.398	1.73	0.010	1.39	0.359	1.27	0.122	1.70	0.015	1.74	0.023	1.69
04/13/20	2.49	1.310	1.62	0.006	0.87	0.409	1.45	0.118	1.64	0.014	1.60	0.020	1.43
04/30/20	1.09	1.492	1.84	0.008	1.17	0.468	1.66	0.146	2.03	0.017	1.98	0.024	1.75
07/06/20	3.43	0.732	0.90	0.008	1.07	0.274	0.97	0.067	0.93	0.008	0.89	0.012	0.87
07/10/20	3.21	0.907	1.12	0.006	0.88	0.318	1.13	0.083	1.15	0.009	1.09	0.012	0.83
08/04/20	5.86	0.816	1.01	0.009	1.23	0.292	1.03	0.081	1.13	0.008	0.89	0.012	0.88
10/29/20	2.07	1.801	2.22	0.009	1.32	0.513	1.82	0.156	2.17	0.024	2.74	0.022	1.55
11/30/20	2.52	0.828	1.02	0.006	0.89	0.251	0.89	0.069	0.96	0.007	0.82	0.013	0.93
12/24/20	2.65	0.924	1.14	0.006	0.86	0.271	0.96	0.076	1.06	0.008	0.97	0.012	0.84
Yearly Avg Flow (MGD) =		**0.810**		**0.007**		**0.282**		**0.072**		**0.009**		**0.014**	
Meter Max (MGD) =		**5.000**		**0.140**		**1.400**		**0.560**		**0.280**		**0.140**	
High Peaking Factor =			**2.22**		**1.44**		**1.82**		**2.17**		**2.74**		**1.75**
Average Peaking Factor =			**1.34**		**1.11**		**1.19**		**1.38**		**1.39**		**1.17**

		Millbrook PS		Newtown PS		Pinecroft PS		Saybrook PS		Spring Knoll PS		The Greens PS	
Rain Date	Rain (in.)	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
01/25/20	2.21	0.003	0.94	0.159	0.94	0.004	1.05	0.094	0.87	0.049	1.13	0.023	1.09
03/28/20	1.31	0.004	1.09	0.356	2.11	0.006	1.86	0.116	1.07	0.106	2.42	0.026	1.24
04/13/20	2.49	0.004	1.02	0.291	1.73	0.004	1.25	0.122	1.13	0.076	1.75	0.018	0.88
04/30/20	1.09	0.005	1.55	0.368	2.18	0.006	1.75	0.131	1.21	0.095	2.18	0.028	1.35
07/06/20	3.43	0.004	1.15	0.150	0.89	0.003	1.02	0.095	0.88	0.044	1.00	0.022	1.04
07/10/20	3.21	0.003	0.77	0.147	0.87	0.003	0.78	0.111	1.03	0.036	0.84	0.017	0.79
08/04/20	5.86	0.004	1.17	0.151	0.90	0.003	0.96	0.114	1.06	0.045	1.04	0.023	1.10
10/29/20	2.07	0.004	1.21	0.416	2.47	0.004	1.17	0.160	1.48	0.094	2.15	0.026	1.24
11/30/20	2.52	0.003	0.86	0.165	0.98	0.003	0.93	0.108	1.01	0.046	1.05	0.023	1.10
12/24/20	2.65	0.003	0.88	0.170	1.01	0.002	0.70	0.113	1.05	0.047	1.07	0.024	1.15
Yearly Avg Flow (MGD) =		**0.003**		**0.169**		**0.003**		**0.108**		**0.044**		**0.021**	
Meter Max (MGD) =		**0.140**		**2.100**		**0.140**		**1.400**		**0.490**		**0.560**	
High Peaking Factor =			**1.55**		**2.47**		**1.86**		**1.48**		**2.42**		**1.35**
Average Peaking Factor =			**1.06**		**1.41**		**1.15**		**1.08**		**1.46**		**1.10**

Exhibit I

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Large Metered Pump Stations - Graphs

Berwyn Pump Station
Daylesford Pump Station
Saybrook Pump Station

Graphs 5A, 5B and 5C

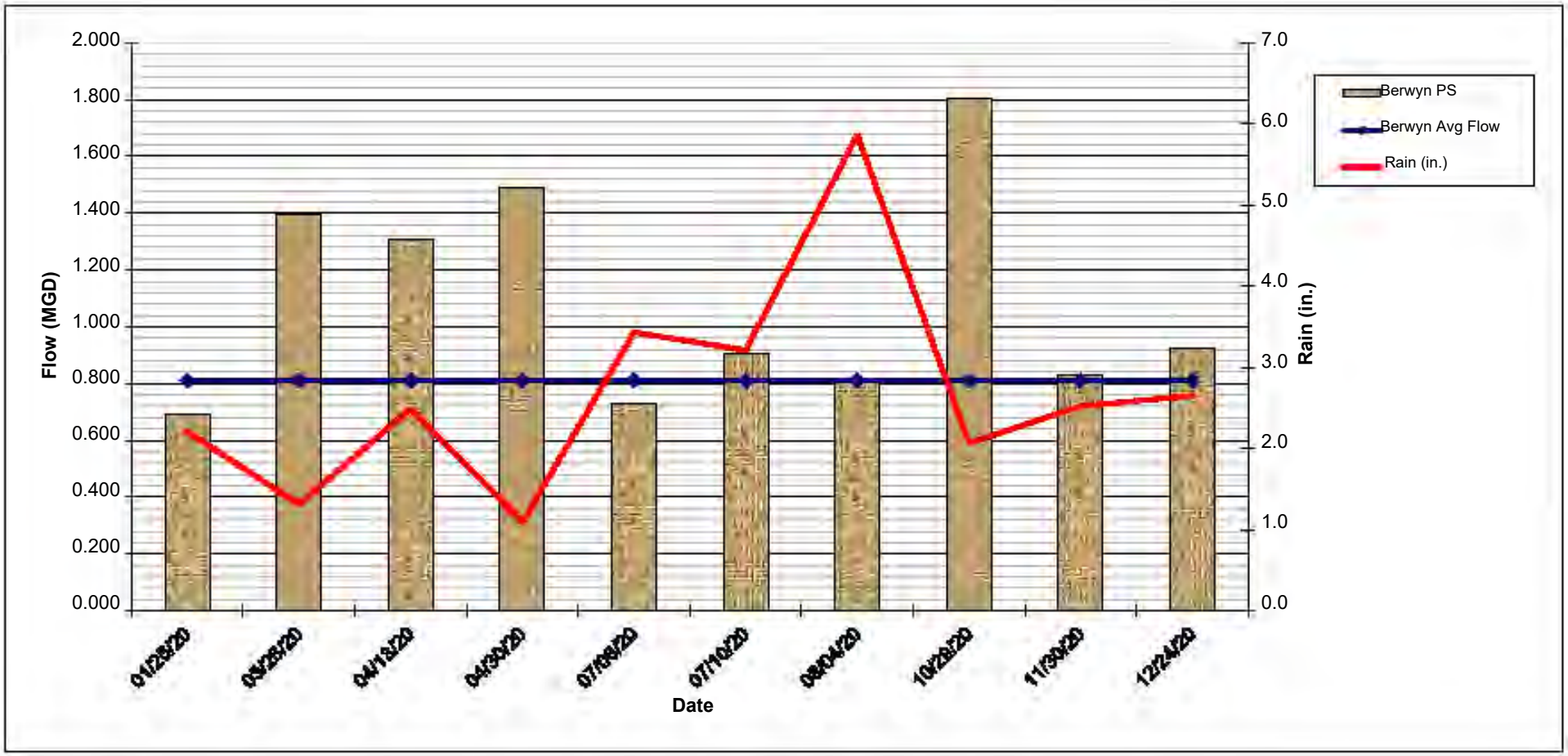
GRAPH - #5A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

BERWYN PUMP STATION



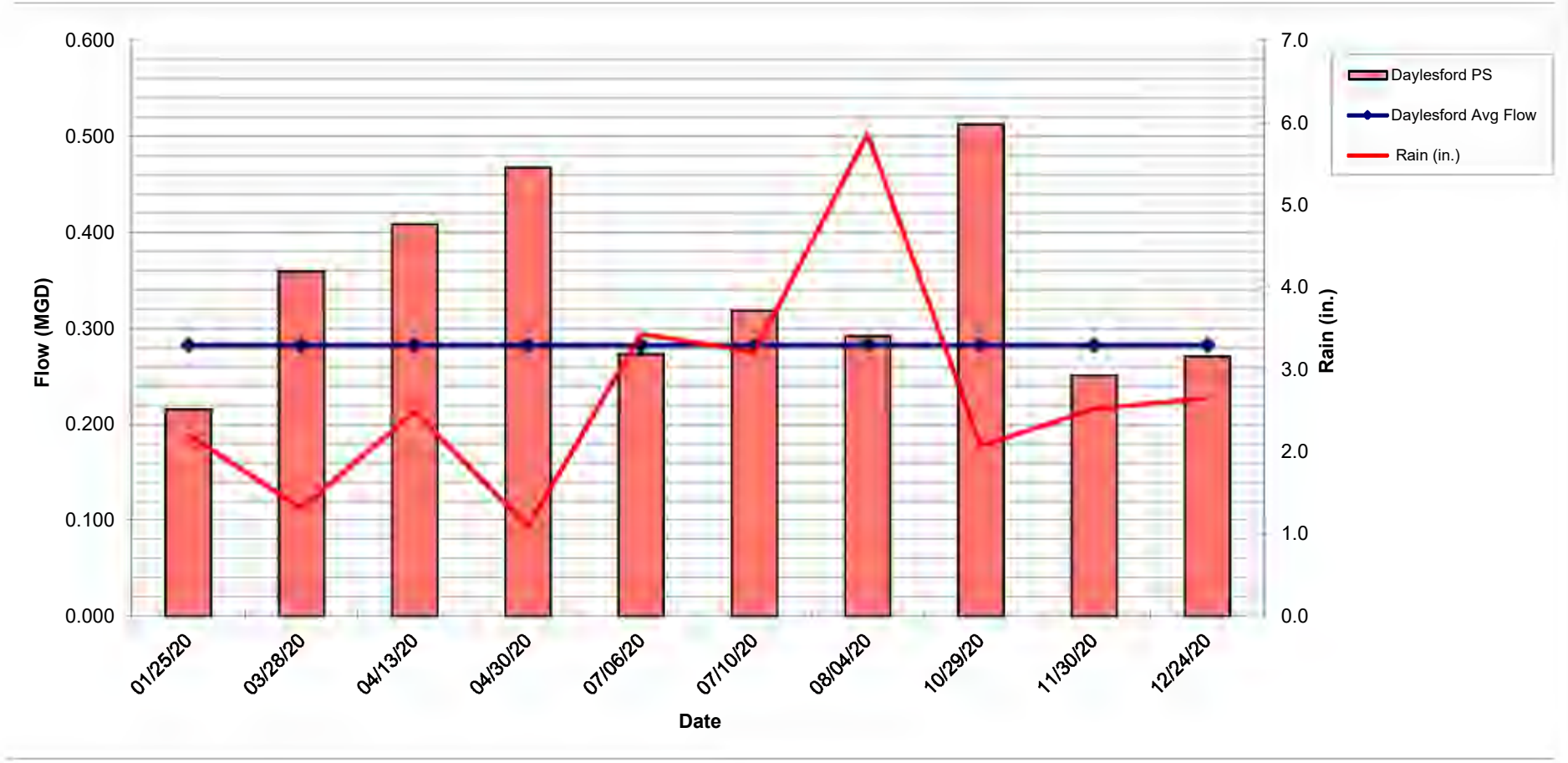
GRAPH - #5B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

DAYLESFORD PUMP STATION



GRAPH - #5C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

SAYBROOK PUMP STATION

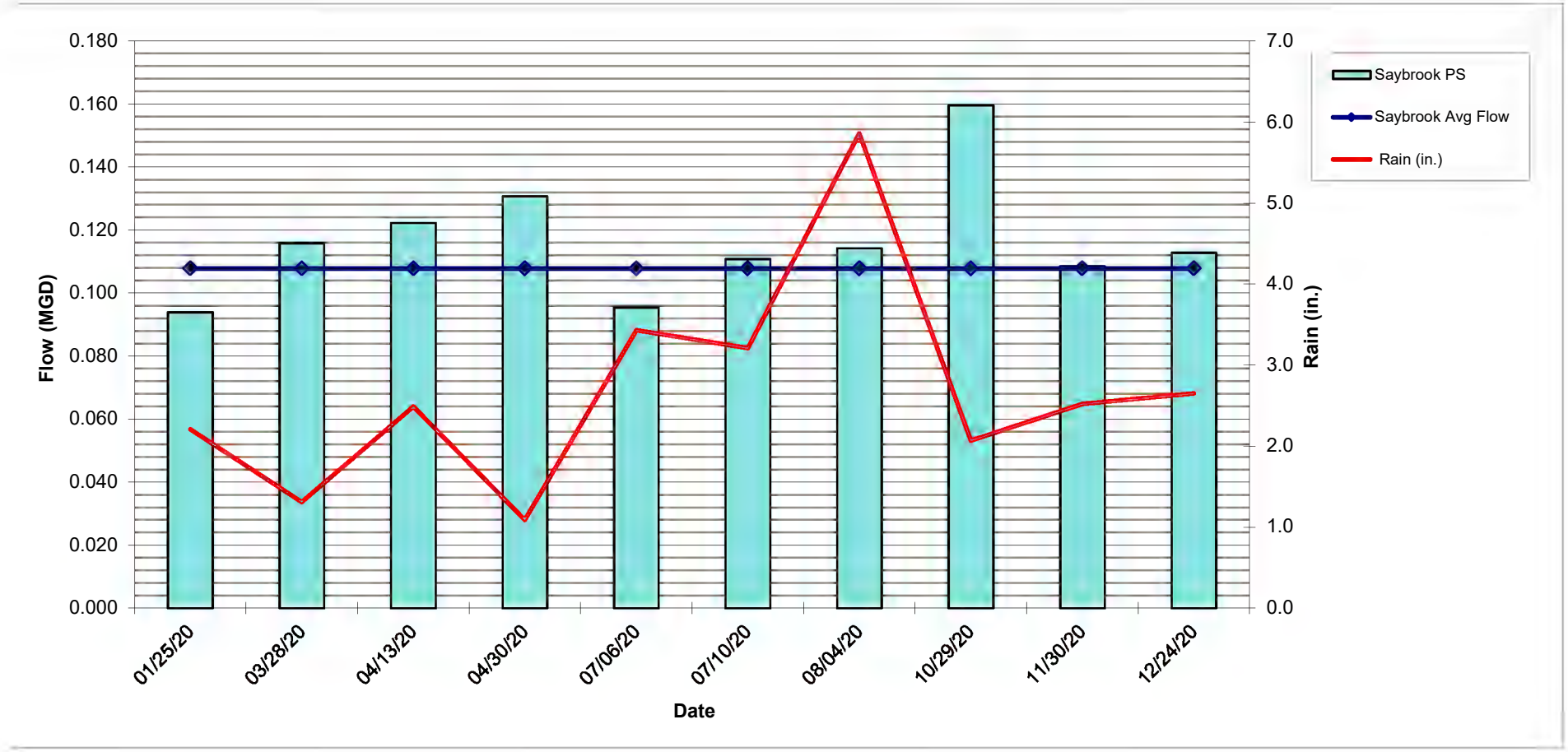


Exhibit J

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Small Metered Pump Stations - Graphs

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Graphs 6A to 6I

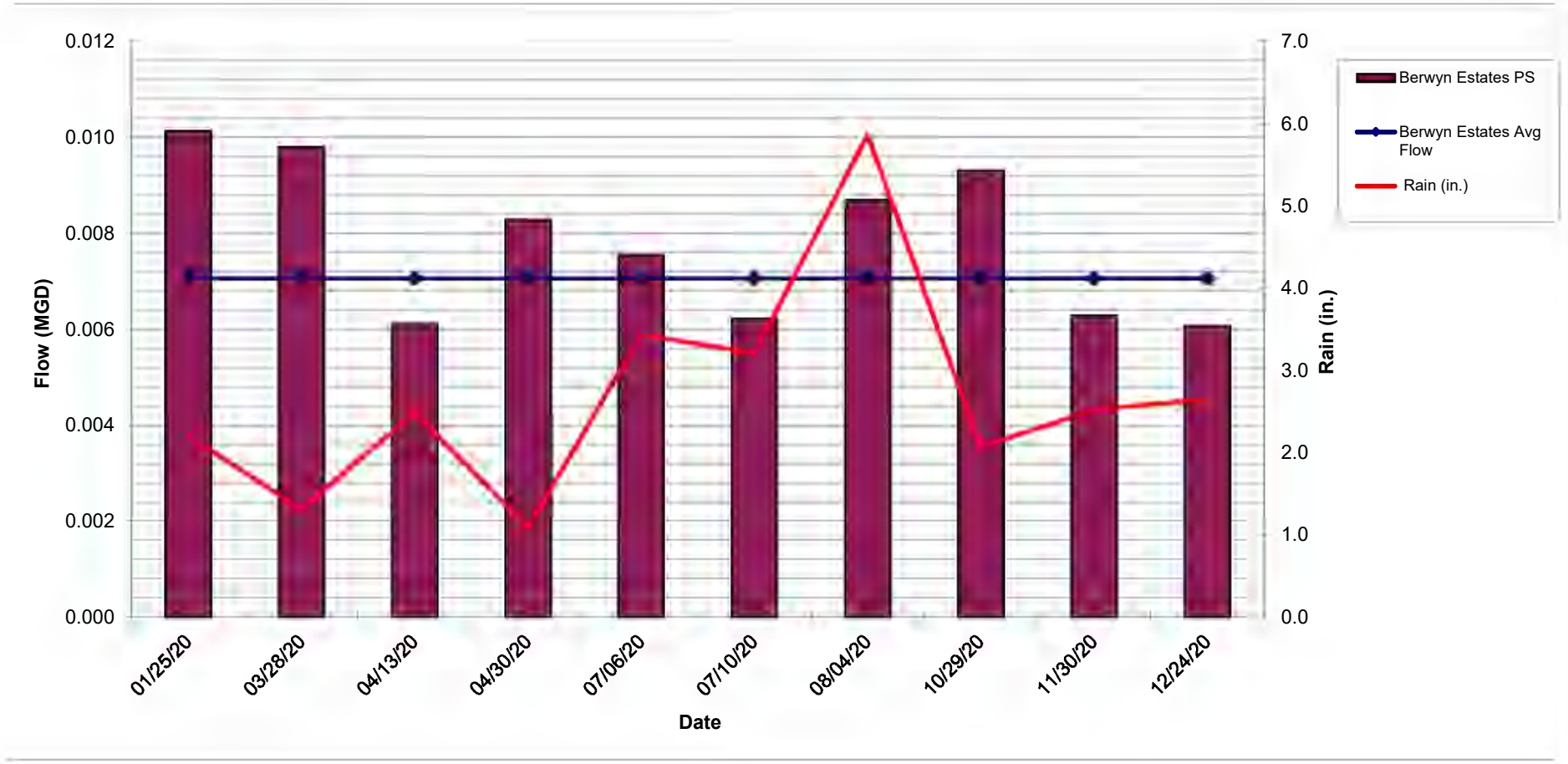
GRAPH - #6A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

BERYWN ESTATES PUMP STATION



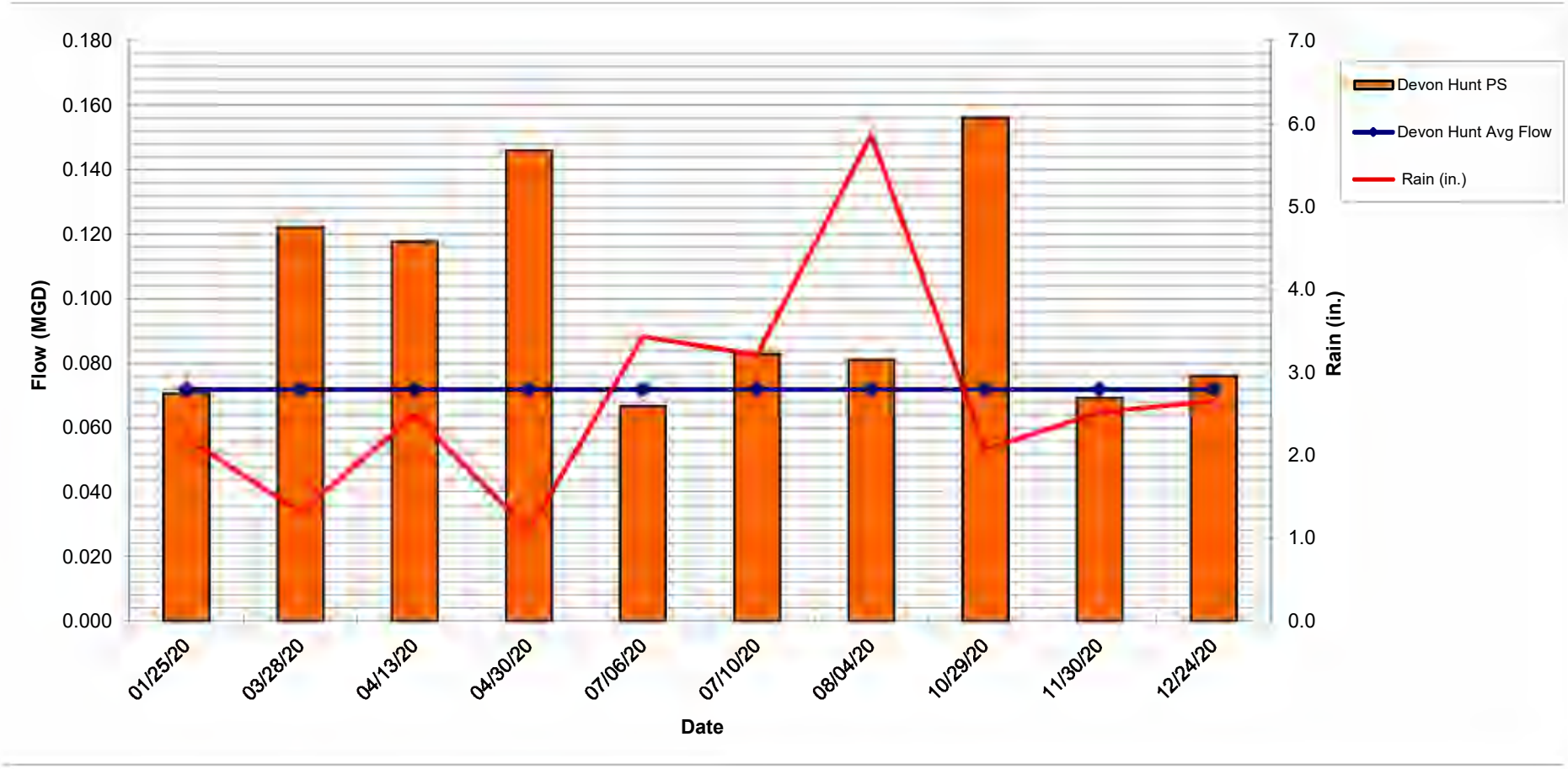
GRAPH - #6B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

DEVON HUNT PUMP STATION



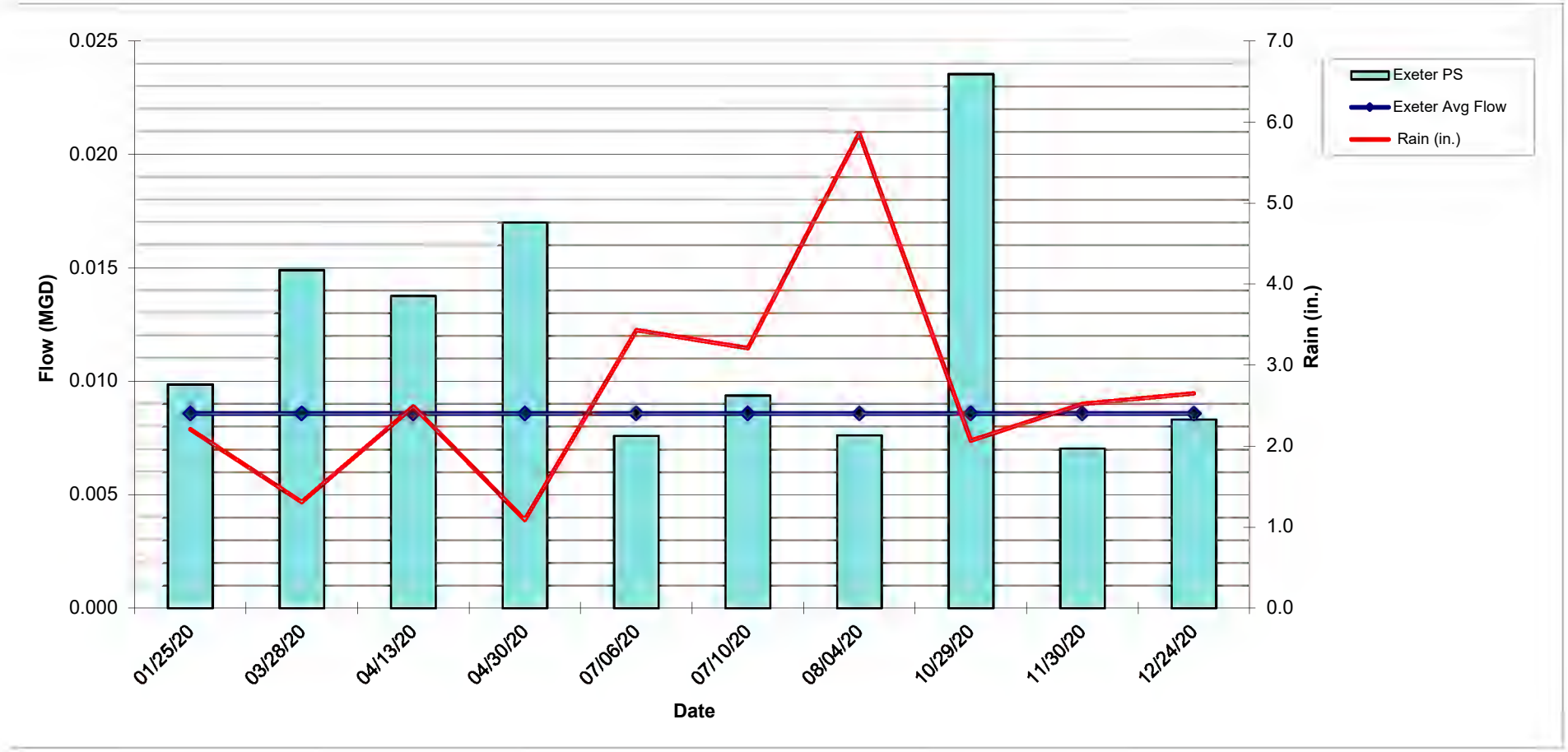
GRAPH - #6C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

EXETER PUMP STATION



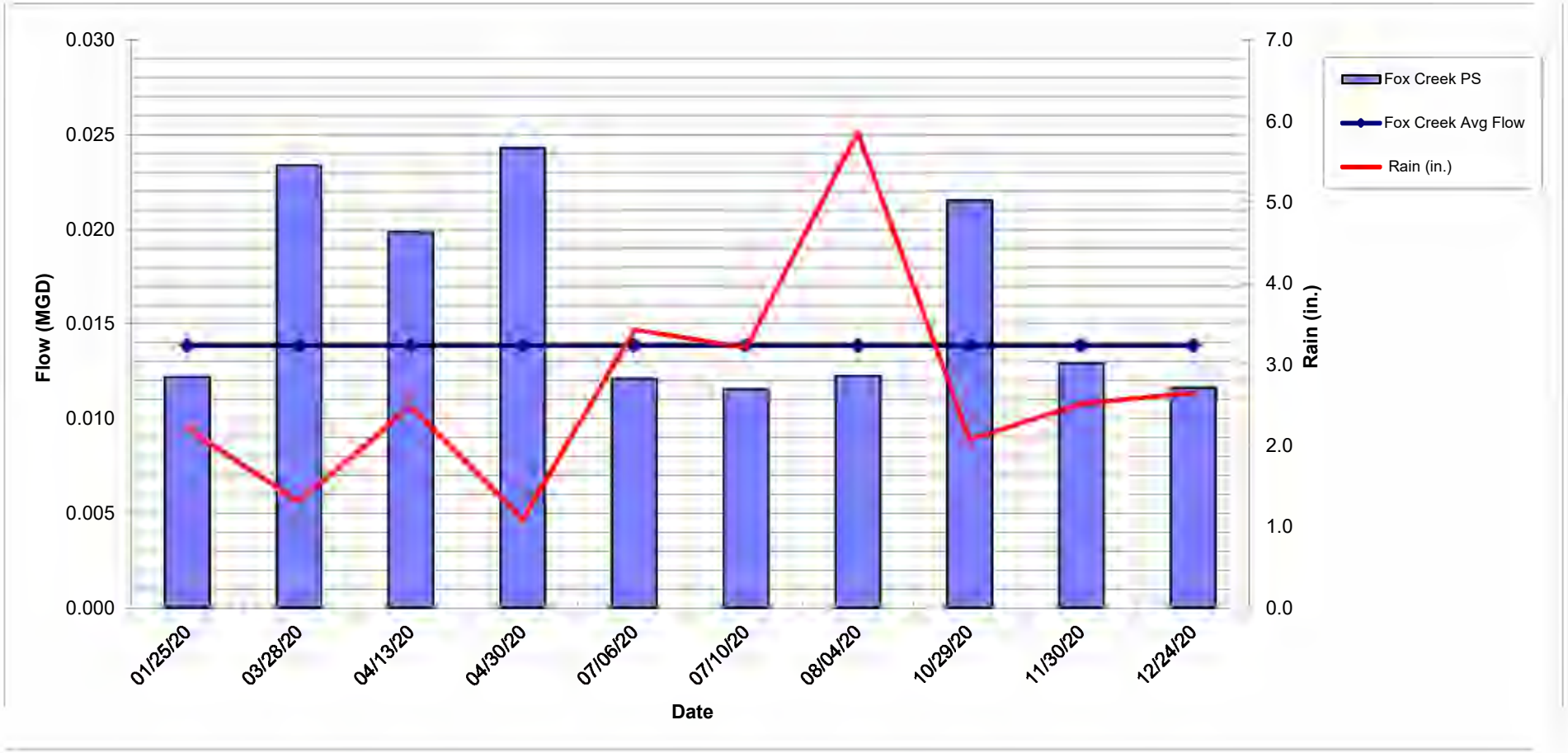
GRAPH - #6D

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

FOX CREEK PUMP STATION



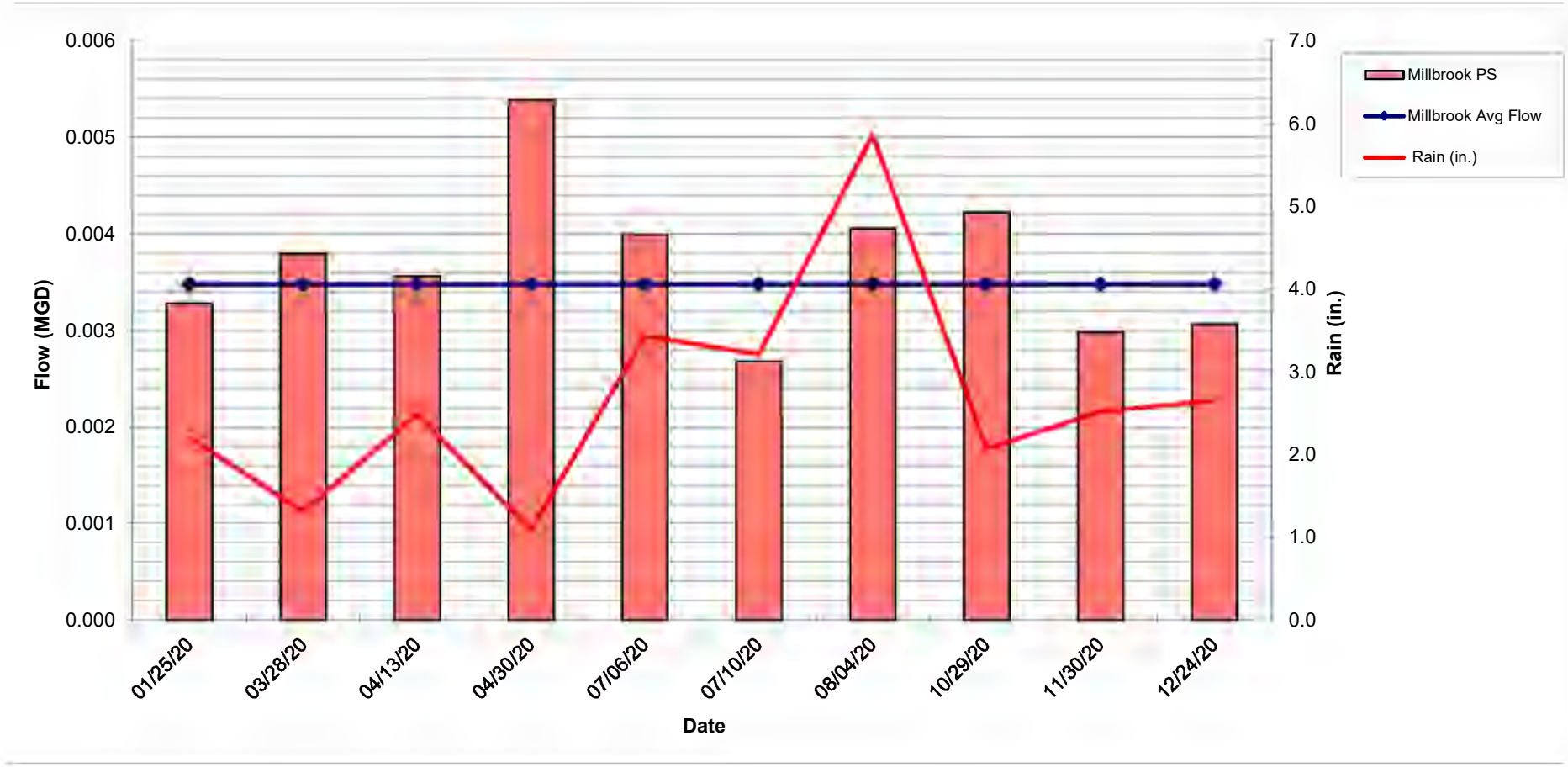
GRAPH - #6E

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

MILLBROOK PUMP STATION



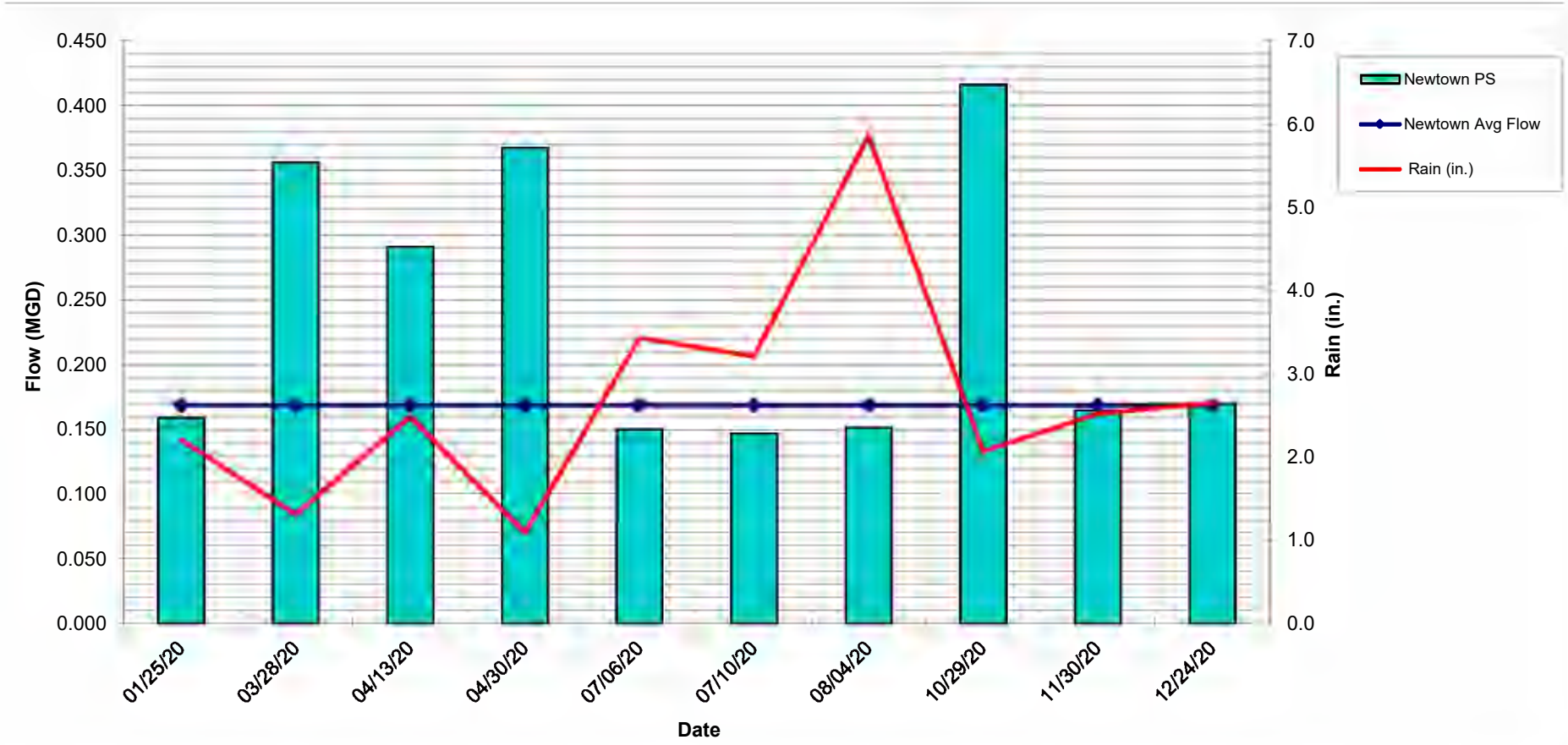
GRAPH - #6F

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

NEWTOWN PUMP STATION



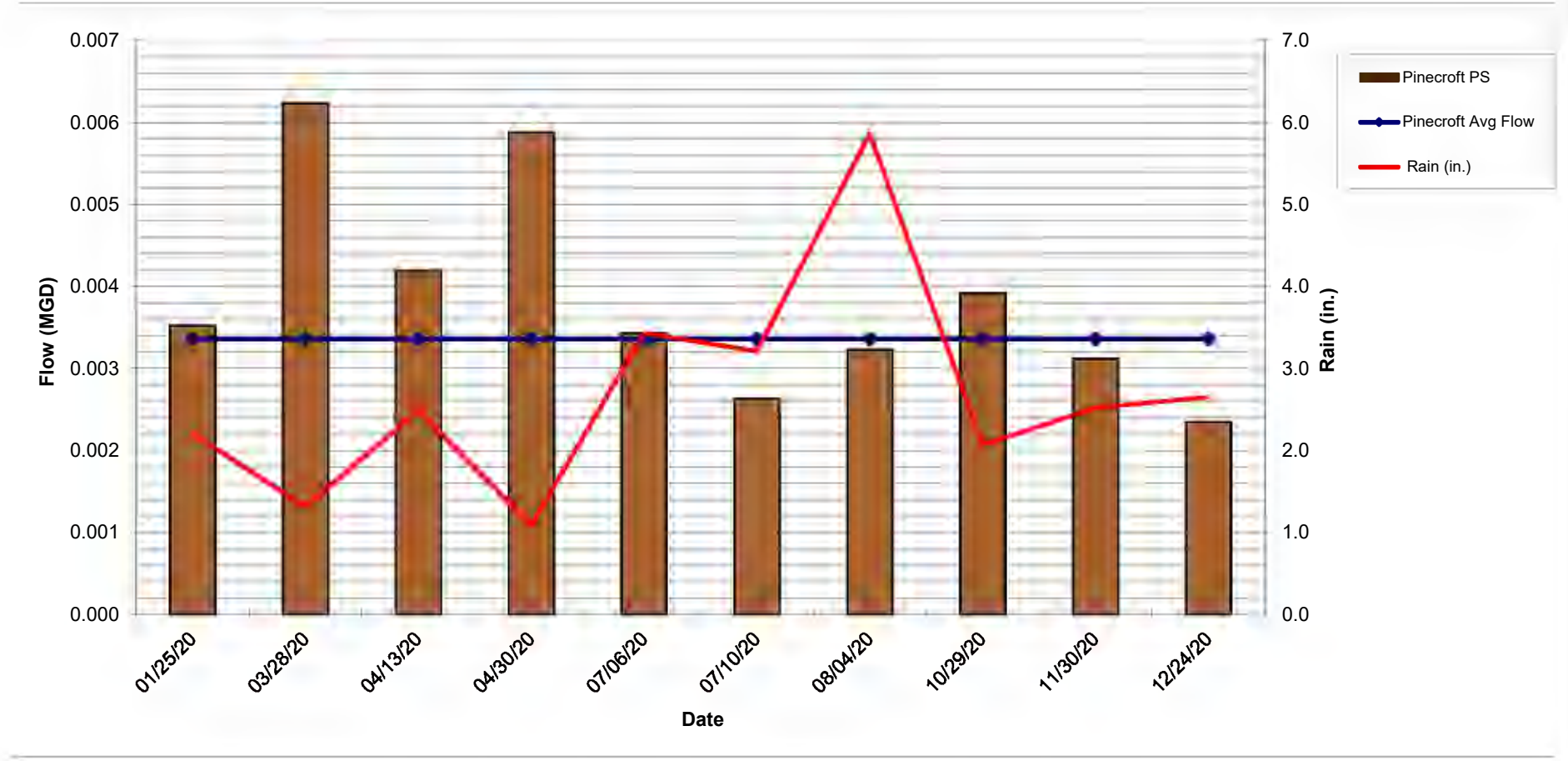
GRAPH - #6G

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

PINECROFT PUMP STATION



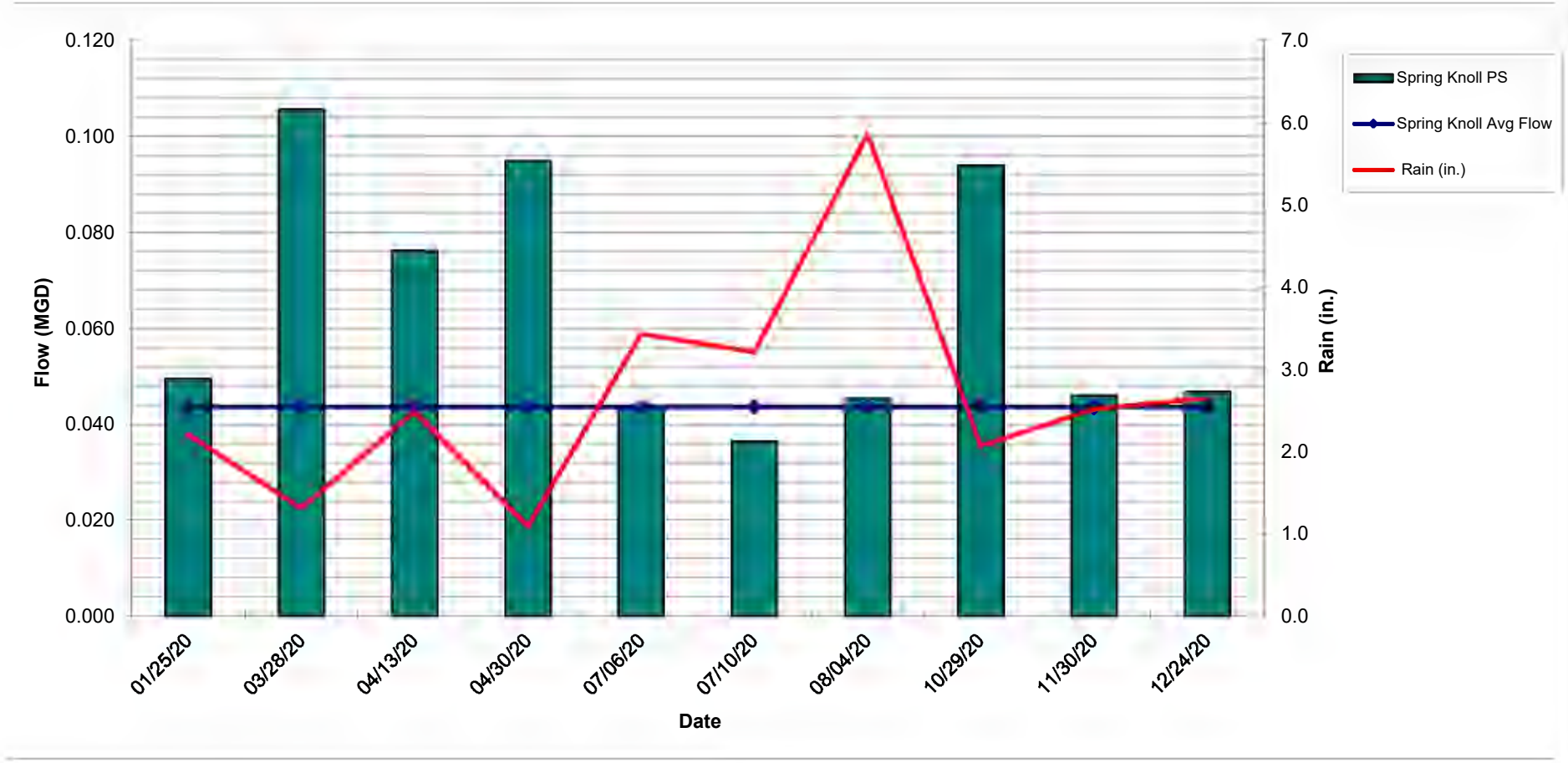
GRAPH - #6H

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

SPRING KNOLL PUMP STATION



GRAPH - #6I

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

THE GREENS PUMP STATION

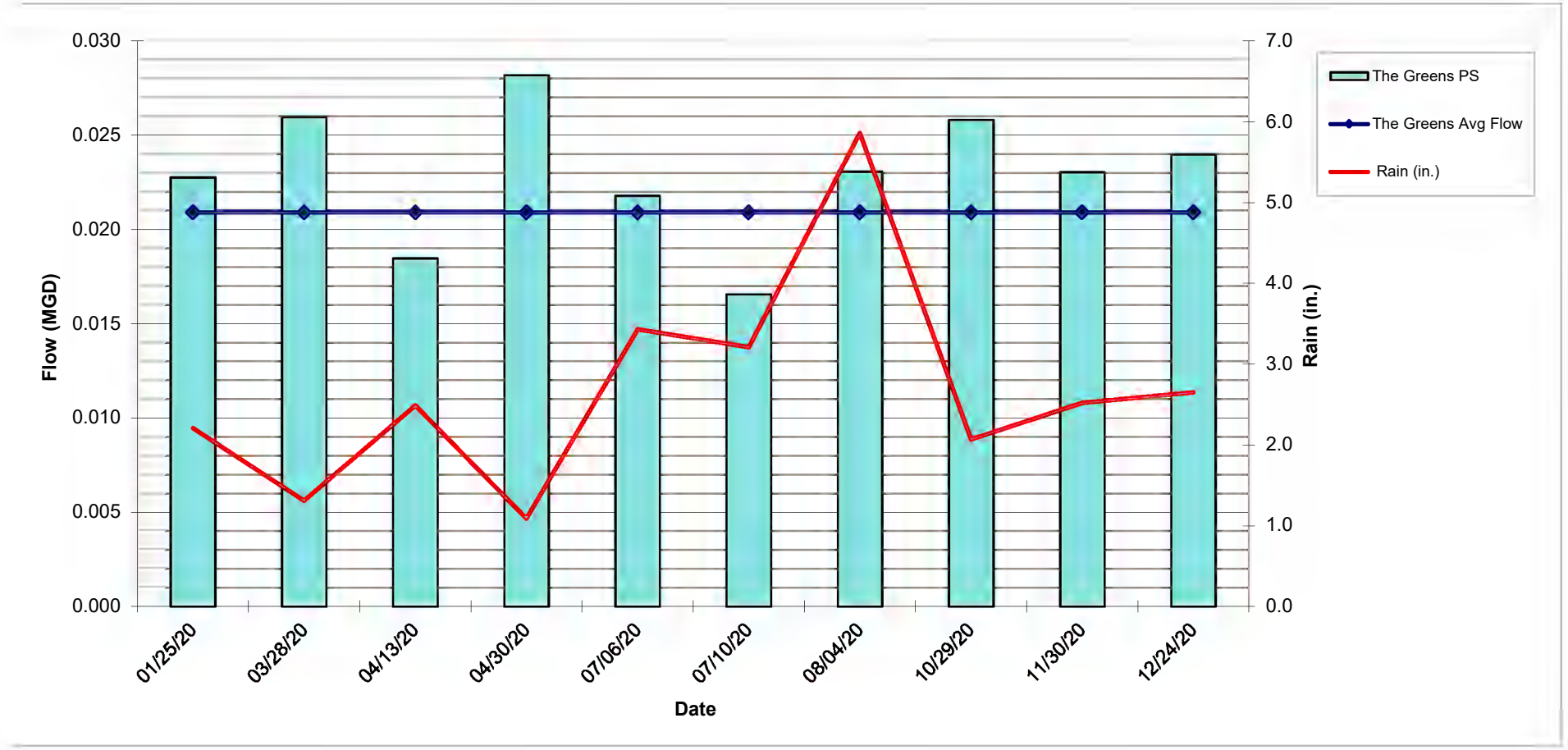


Exhibit K

Easttown Municipal Authority

Pump Station Flow Meter

Calibration Reports

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: First Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	04-08-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	04-08-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+2
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	04-08-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Second Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	06-19-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	06-19-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	06-19-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Third Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	08-05-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	08-05-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	08-05-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Fourth Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	01-05-21
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

1900 Market Street
Suite 300
Philadelphia, PA 19103
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www.pennoni.com

EWTPX 00030 March 15, 2021

Mr. Steve O'Neil, Chief, Operations Section
PA DEP, Clean Water
Southeast Regional Office
Two East Main Street
Norristown PA 19401-4915

RE: Township of East Whiteland
2020 Chapter 94 Report

Dear Mr. O'Neil:

On behalf of the Township of East Whiteland, please find enclosed two (2) copies of the 2020 Chapter 94 Annual Report for the Township's sewerage facilities.

Should you have any questions concerning this, please feel free to contact the undersigned.

Sincerely,

PENNONI

Charles Faulkner

Charles Faulkner, PE
Township Wastewater Engineer

CF/rg

cc: Richard Taylor, Valley Forge Sewer Authority via email
John Neild, Director of Public Works – East Whiteland, via email

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	**EAST WHITELAND TOWNSHIP**	Permit No.:	**PA N/A**
Mailing Address:	**209 CONESTOGA ROAD**	Effective Date:	**N/A**
City, State, Zip:	**FRAZER, PA 19355**	Expiration Date:	**N/A**
Contact Person:	**John Nagel**	Renewal Due Date:	**N/A**
Title:	**TOWNSHIP MANAGER**	Municipality:	**EAST WHITELAND**
Phone:	**610-897-4205**	County:	**CHESTER**
Email:	**JNAGEL@EASTWHITELAND.ORG**	Consultant Name:	**PENNONI ASSOCIATES INC.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   Attachment A shows the historic and projected hydraulic demand for the service area of East Whiteland Township. The hydraulic projections were calculated based on the 2020 annual average flow and the proposed connections for the next five years.

   East Whiteland Township owns and operates a wastewater treatment plant associated with the Malvern Hunt subdivision. The WWTP consists of aerated lagoons and land application of effluent. A separate Chapter 94 report will be submitted which addresses this WWTP.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment B**)

   ☒ List summarizing each extension or project attached (**Attachment C**)

   ☒ Schedules describing how each project will be completed over time and effects attached (**Attachment C**)

   Comments:

   Attachment B - East Whiteland Sanitary Sewer Collection System has been updated to include all sewer extensions completed in 2020.

   Attachment C provides a list of projects which were constructed in 2020, under construction currently, or will be constructed and connect to the system within the next five years.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   See Attachment D

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

See Attachment E

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **12**)

☒ Discussion of condition of each pump station attached (**Attachment F**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment G**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

John Nagel	John Nagel
Name of Responsible Official	Signature
610-897-4205	3/15/2021
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Faulkner, P.E.	Charles Faulkner
Name of Preparer	Signature
215-254-7751	3/15/2021
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

ATTACHMENT A

ATTACHMENT A

East Whiteland Township

Historical Hydraulic Loading

	2016		2017		2018		2019		2020	
	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)
Jan	1.524	3.15	1.665	3.25	1.521	2.43	2.179	4.48	1.477	3.390
Feb	2.155	5.14	1.772	1.57	1.833	6.18	2.111	3.23	1.511	2.650
Mar	1.840	1.83	1.373	5.22	1.992	4.09	2.256	5.22	1.437	4.45
Apr	1.814	2.49	1.587	2.78	1.782	3.76	1.654	3.09	1.508	5.92
May	1.803	4.49	1.600	5.30	1.926	6.36	1.823	6.21	1.265	2.84
Jun	1.678	1.46	1.608	4.81	1.979	6.04	1.834	8.29	1.121	2.87
Jul	1.640	4.63	1.387	5.46	1.852	6.13	1.788	5.66	1.110	8.61
Aug	1.620	3.05	1.569	4.79	2.043	9.82	1.493	1.95	1.446	9.38
Sep	1.720	4.88	1.638	1.84	2.417	9.53	1.391	2.25	1.168	2.47
Oct	1.451	1.29	1.515	4.54	2.041	2.48	1.428	6.05	1.173	4.19
Nov	1.513	3.76	1.538	1.83	2.205	8.32	1.360	1.72	1.272	5.95
Dec	1.659	3.48	1.512	1.96	2.291	5.99	1.448	4.81	1.480	6.50
Annual Average	1.701	39.65	1.564	43.35	1.990	71.13	1.730	52.96	1.331	59.22
Max Month	2.155		1.772		2.417		2.256		1.511	
Max 3 Month	1.936		1.603		1.936		2.221		1.485	
Hydraulic Ratio	1.138		1.025		0.973		1.284		1.116	
									1.107	
								5 - year Hydraulic Annual Average Annual Flow	1.663	

Monthly Rainfall data from recordings taken from USGS 01473169 Valley Creek water information collection station.

East Whiteland Township Projected Hydraulic Loading

Year	Previous Year's Annual Average Flow	New EDU's	Increased Flow (MGD)	Projected Annual Average Flow (MGD)	Hydraulic Ratio	Projected Max Month (MGD)
2021	1.331	550.4	0.093	1.423	1.107	1.576
2022	1.423	740.5	0.125	1.548	1.107	1.714
2023	1.548	681	0.115	1.662	1.107	1.841
2024	1.662	427.5	0.072	1.734	1.107	1.920
2025	1.734	43	0.007	1.742	1.107	1.928

(1) Calculated Flow Rate Per EDU 168.27 (gal/EDU)

(2) Calculated 5-year Hydrualic Ratio 1.107

ATTACHMENT B


Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA
Pump Stations
1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
* 9. ~~Church Rd~~
* 10. ~~Frame Ave~~
11. Hillbrook Circle
12. King Rd
13. Malvern Hunt
14. Planebrook Rd
* Decommissioned
Meters
I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows
XII. Atwater
LEGEND
Manholes
Meters
Pump Stations
Laterals
Weston Master Plan Area
Municipal Boundaries
Lakes & Ponds
Streams
Subdivisions
Pump Station Drainage Basins
Parcel Boundaries
Valley Forge Service Area
Valley Forge Service Area Proposed
Force Mains & Size
8" Gravity Sewer
8" Proposed Gravity Sewer
10" Gravity Sewer
12" Gravity Sewer
15" Gravity Sewer
15" Proposed Gravity Sewer
16" Gravity Sewer
18" Gravity Sewer
18" Proposed Gravity Sewer
20" Gravity Sewer
21" Gravity Sewer
24" Gravity Sewer
27" Gravity Sewer
36" Gravity Sewer
Unknown Pipe Diameter
0 600 1,200
Feet
1 inch = 600 feet
REVISION DATE: 3/3/2020
MAP NOTES:
Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohli & Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as-built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.
Data Sources: East Whiteland Township, Schoor DePalma, Kohli & Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.
NOTES:
1 PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2 CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020
LEGEND: APPROVED/PENDING DEVELOPMENTS
- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN
Hillbrook Circle PS
Malvern Hunt PS
Mill Ln PS
Lee Blvd PS
Flat Rd PS
Lapp Rd PS
Wilburdale Rd PS
Deer Run PS
Frame Ave PS
Church Rd PS
Meadow View PS
Westgate PS
King Rd PS
To East Goshen
ROUTE 401 AREA
BACTION WAY SUBDIVISION (5 SINGLE FAMILY HOMES)
MALVERN HUNT WWTP SPRAY IRRIGATION FIELD
BACTION HILL ROAD AREA
MALVERN DUCKLINGS 10,000 FT^2 DAYCARE (PENDING)
GREAT VALLEY COMMUNITY ORGANIZATION (41,128 S.F COMMUNITY CENTER)
GREAT VALLEY CROSSING 42 SINGLE FAMILY HOMES
MALVERN CROSSING (66 TOWNHOUSES)
WHITELAND VILLAGE SANITARY SEWER EXTENSION
SWEDESFORD ROAD AREA
PLANEBROOK AREA
CHURCH ROAD SEWER EXTENSION (1600 LF GRAVITY SEWER); ABANDON CHURCH ROAD PUMP STATION
GMH FRAZER LANES (227-UNIT MULTI-FAMILY APARTMENTS)
OLD ORCHARD PARK (10 MANUFACTURED HOUSING UNITS)
SHIRTZ FARM (14 SINGLE FAMILY HOMES) LOW PRESSURE SEWER
FLAT ROAD SUBDIVISION (37 SINGLE FAMILY HOUSES)
ATWATER
SWEEDESFORD SQUARE APARTMENTS 244 APARTMENTS
WATERWALK 153 ROOM HOTEL
UPTOWN WORTHINGTON MOVIE THEATER AND OFFICE BUILDINGS
VANGUARD
Immaculata University
Charlestown Oaks
Charlestown Meadows
Charlestown Elementary School
X. Charlestown Oaks Meter
XI. Charlestown Meadows Meter
III. Lee Blvd Meter
XII. Atwater Meter
IV. Church Rd Meter
(Tredyffrin Township eliminated meter on 8-3-13 due to additional gravity sewer extension.)
VI. Unisys Meter
V. Matthews Rd Meter
VII. Northridge/Miner Hill Meter
IX. Woodview Apt Meter
I. Old Lincoln Hwy Meter
II. Warren Ave Meter
VIII. Erin Glen Meter
Planebrook Road PS
Frame Ave PS #10
Malvern Hunt PS #13
Hillbrook Circle PS #11
Mill Lane PS #2
Lee Blvd PS #4
Wilburdale Rd PS #3
Flat Rd PS #6
Lapp Rd PS #7
Deer Run PS #1
Meadow View PS #5
Church Rd PS #9
Westgate PS #8
King Rd PS #12

ATTACHMENT C

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
McIntosh	40	0.0	40.0	10.0	10.0	10.0	10.0	-
RedGo Development - Lot 1 Site	20.5	20.5	0.0	-	-	-	-	-
Winthrop Corporation	25	0.0	25.0	15.0	10.0	-	-	-
Whiteland Village - Phase I	200	0.0	200.0	-	-	100.0	100.0	-
King/Carol/Summit	250	240.0	10.0	3.0	3.0	3.0	1.0	-
Commitment: Pre-2008 @ 364 EDUs, Post-2008 @ 480	480	281.4	198.6	-	75.0	75.0	48.6	-
Glasgow Tract	23	0.0	23.0	-	8.0	5.0	5.0	5.0
Swedesford/Church Road	24	17.0	7.0	-	4.0	3.0	-	-
Hillbrook Circle	35	33.0	2.0	-	2.0	-	-	-
Shirtz Farm Subdivision	14	0.0	14.0	5.0	9.0	-	-	-
Linden Hall	60	60.0	0.0	-	-	-	-	-
Liberty Property (Quarry Ridge)	144	132.5	11.5	5.0	4.5	2.0	-	-
Quarry Ridge - Additional	15	2.0	13.0	-	5.0	5.0	3.0	-
O'Neill Offices	39.5	13.0	26.5	-	9.0	9.0	8.5	-
O'Neill/Rubino (Deerfield Commons)	40	0.0	40.0	10.0	10.0	10.0	10.0	-
Veterans Life (Aegon)	22	0.0	22.0	-	8.0	8.0	6.0	-
Misc. EDUs from re-rate & agreed 1990 Capacity	76.4	16.0	60.4	15.0	15.0	15.0	15.4	-
Remaining EDUs from Rt. 30 Development	142	92.0	50.0	15.0	15.0	10.0	10.0	-
Poplar Development	29	21.0	8.0	3.0	5.0	-	-	-
Willinghouse Preserve (Tattersall Development)	11	11.0	0.0	-	-	-	-	-
Touchstone Office Complex	1	1.0	0.0	-	-	-	-	-
Trinity Christian Complex	11	0.0	11.0	5.0	6.0	-	-	-
Micron technologies **	33	33.0	0.0	-	-	-	-	-
JMP Malvern (19 Morehall Road)	30	23.0	7.0	-	7.0	-	-	-
EDUs of which 46,393 gpd {168.7 EDUs} are Tredyffrin Twp	380.3	364.3	16.0	16.0	-	-	-	-
Atwater Village - Commercial	77	32.0	45.0	15.0	15.0	15.0	-	-
Atwater Village - The Haven [326 ea. Apartments @ 190 gpd/275 gpd/EDU = 225.2 EDUs]	225.2	225.2	0.0	-	-	-	-	-
Townes at Malvern (Section 1 - Cockerham)	52	51.0	1.0	1.0	-	-	-	-
8 Lee Boulevard - new EDUs (3 existing)	5	3.0	2.0	2.0	-	-	-	-
80 Watch Hill Lane	1	1.0	0.0	-	-	-	-	-
Raymour & Flanigan - 1 Lee Boulevard	6	2.4	3.6	3.6	-	-	-	-
EWT Fire Station #5	1	1.0	0.0	-	-	-	-	-
Swedesford 66	66	8.0	58.0	14.0	14.0	14.0	14.0	10.0
Chester Valley Golf Club	38	0.0	38.0	-	-	-	38.0	-
Ward (Ciorletti) Parcel (634 Lancaster Avenue)	1	1.0	0.0	-	-	-	-	-
Malvern Court Mobile Home Park	110	110.0	0.0	-	-	-	-	-
427 Conestoga Rd	1	1.0	0.0	-	-	-	-	-
Janssen Pharmaceutical - Building M9	0	0.0	0.0	-	-	-	-	-
Aldi	0	0.0	0.0	-	-	-	-	-
Veternary Clinic	1	1.0	0.0	-	-	-	-	-
Cubesmart	20	20.0	0.0	-	-	-	-	-
Public Works Building	1	1.0	0.0	-	-	-	-	-
20 Moores Road (Office Building)	1	1.0	0.0	-	-	-	-	-
Frazer Mennonite (53 & 55 Maple Linden Lane)	2	2.0	0.0	-	-	-	-	-
Covenant Presbyterian Church Land Devel.	1	1.0	0.0	-	-	-	-	-
The Malvern School	3	3.0	0.0	-	-	-	-	-
The Vanguard Group	59	59.0	0.0	-	-	-	-	-
Liberty Property Trust - 6 Great Valley Parkway	16.6	0.0	16.6	7.6	9.0	-	-	-
Townes at Malvern (a.k.a. Section 2 - Malvern Walk)	64	64.0	0.0	-	-	-	-	-
existing flow)	228	0.0	228.0	50.0	50.0	50.0	50.0	28.0
Willets Farm - 99 Church Road	44	33.0	11.0	11.0	-	-	-	-
RedGo Development - Lot 2 Site	7.6	4.0	3.6	3.6	-	-	-	-
RedGo Development - Lot 3 Site	6.6	0.0	6.6	6.6	-	-	-	-
Bacton Hill Subdivision	6	0.0	6.0	3.0	3.0	-	-	-
Exeter 8 Lee L.P.	1	0.0	1.0	1.0	-	-	-	-
Great Valley Corporate Center Redevelopment	650	0.0	650.0	200.0	200.0	200.0	50.0	-
Great Valley Community Organization Rec. Center	1	0.0	1.0	1.0	-	-	-	-
Accolade Properties	1	0.0	1.0	1.0	-	-	-	-
Swedesford Square Land Development	170	170.0	0.0	55.0	19.0	-	-	-
Lincoln Court Shopping Center	11	11.0	0.0	-	-	-	-	-
Aegon/St. Gobain (Office Buildings)	22	0.0	22.0	11.0	11.0		-	-
401 Corridor Extension	25	4.0	21.0	5.0	5.0	11.0	-	-
Planebrook Road Sewer Extension	75	0.0	75.0	-	25.0	25.0	25.0	-

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
Bacton Hill / Swedesford Road Sewer Extension	100	0.0	100.0	-	34.0	33.0	33.0	-
6 Frame Avenue	1	1.0	0.0	-	-	-	-	-
7 Frame Avenue	1	0.0	1.0	-	-	-	-	-
15 Frame Avenue	1	0.0	1.0	-	-	-	-	-
Flat Road Subdivision	37	11.0	37.0	15.0	15.0	7.0	-	-
473 Conestoga Road	3	1.0	2.0	2.0	-	-	-	-
458 & 476 Lancaster Ave (Eadah)	11	0.0	11.0	11.0	-	-	-	-
Frazer Lanes (548-554 Lancaster Ave)	115	0.0	115.0	20.0	80.0	15.0	-	-
Loch- Aerie (700 Lancaster Ave)	8	0.0	8.0	-	-	-	-	-
East Side of 7 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
2 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
215 South Phoenixville Pike	3	0.0	3.0	-	3.0	-	-	-
Waterwalk Hotel	106	0.0	106.0	-	50.0	56.0	-	-
105 Church Street	3	0.0	3.0	3.0	-	-	-	-
17 Spring Road	2	0.0	2.0	2.0	-	-	-	-
400 Three Tun Road	2	0.0	2.0	-	2.0	-	-	-
4 Charles Street	1	1.0	0.0	-	-	-	-	-
512 Lapp Road	2	0.0	2.0	2.0	-	-	-	-
COMMITTED EDU TOTALS	**4,543.7**	**2,184.3**	**2,370.4**	**550.4**	**740.5**	**681.0**	**427.5**	**43.0**

Total EDUs in 2019 Chapter 94 Report	7,601.6
Total EDUs Connected in 2020	306.3
Total EDUs in 2020	7,907.9
Annual Average Flow (MGD)	1.331
Flow Rate Per EDU	168.27

ATTACHMENT D

Program for Sanitary Sewer Monitoring, Maintenance and Repair

[25 Pa. Code § 94.12(a)(5)]

The Township monitors sewer flow leaving and entering the Township via flow meters on a daily basis. Flow Reports are compiled on a monthly basis. Any irregular patterns are investigated and corrected as soon as possible. Meter pits are checked on a routine basis to determine if the meters are functioning properly and that there is no debris accumulating within the flumes.

The Townships Public Works Department is responsible for normal daily maintenance and preventative maintenance of the sewage collection system including pump stations. The Public Works Department also is responsible for handling emergency conditions on a 24-hour basis. Ongoing visual inspections indicate the sewer is generally in good condition.

The Township Sewer Department uses video inspection equipment to inspect sewer mains for infiltration, roots and grease and locate areas of I/I. The Department is able to determine areas of concern, clean lines and make any necessary repairs as required. As an on-going practice, the Township periodically flushes the sanitary sewer lines throughout the Township.

Manhole covers are adjusted and/or watertight gaskets are being installed in low-lying areas. As part of the township's street resurfacing program, manhole covers and frames are being replaced with new gaskets covers as required and are adjusted to the new pavement grades to help eliminate inflow. Manhole inserts have been added in areas that were experiencing inflow through manhole covers.

By ordinance, all new sewer lines, laterals and building sewer must be inspected and air tested by the Township Sewer Engineer or Code Official before the lines are put into service. This procedure had allowed the Township to detect potential defective workmanship and materials, and/or in the process eliminate any potential for future I/I.

The Township is continuing the corrective measures necessary to prevent unwanted runoff from entering into the system, thus reducing the I/I in the system. The Township has created a numbering system for all manholes in its sanitary sewer system and located each manhole with GPS. A sewer system layer had been developed in its GIS data map with each manhole located and identified. The Township is beginning to televise its system again and is inputting this information onto the new GIS layer to allow the Township to better detect and remedy excessive infiltration and inflow if encountered.

ATTACHMENT E

Condition of the Sewer System

[25 Pa. Code § 94.12(a)(6)]

The Mill Lane Sewer Main Replacement Phase 1 construction project was operational as of November 2013, and the Sidley Road Sewer Main Replacement Phase 2 construction project was operational as of March 2014.the completion of the Phase 1 and 2 projects eliminated the hydraulic restriction in the East Whiteland Township sewer mains in the Mill Land and Sidley Road areas. Consequently, the connection restriction for East Whiteland has also been eliminated for the Mill Lane and Sidley Road areas.

The Improvements to the Mill Lane and Sidley Road sewer system also completed Phase 1 and 2 aspects of the Corrective Action Plan (CAP) currently on file with PaDEP. Phase 3 of the CAP related to improvements to the Lee Boulevard Pump Station are still to be implemented. The conditions of the Connection Management Plan Currently on file with PaDEP are still in effect for the contributory drainage areas from Charlestown that flows through the Mill Lane and Sidley Road Sewer Systems.

In 2016, upgrade improvements were made to the sanitary sewer within Conestoga Road. Approximately 3,780 L.F. of new 18-inch, 20-inch and 24-inch pipe were installed to replace existing deteriorating sewer.

During 2017, the following sanitary sewer system work was done.

- Wilburdale Pump Station and Force main improvements were completed,
- Planebrook Pump Station force main improvements were completed.
- Deer Run Pump Station emergency generator replacement was started and were completed in 2018

During 2018 , the following sanitary sewer system work was done.

- On August 23, 2018, a portion of a 10-inch sewer main collapsed on Warren Avenue. The repair consisted of replacing approximately 100 L.F. of the deteriorated main.
- Construction of Planebrook Pump Station was complete.
- On November 30, 2018, Frame Ave Pump Station was decommissioned and flow was diverted to the Planebrook Pump Station.

During 2019, the following sanitary sewer system work was done.

- Flat Road Pump Station was shut down on January 24, 2019 due to a sinkhole which developed at the station and jeopardized the integrity of the station. A new pump station was built and put into service in October of 2019.
- Construction of the Chester Valley Golf Course Sewer Extension began in December of 2019.

During 2020, the following sanitary sewer system work was done.

- Pump #1 at Westgate Pump Station was replaced on April 14, 2020 with a new pump.

- Church Road Pump Station was turned off on March 14, 2020 and flow was diverted through the new gravity sewer installed line through Chester Valley Golf Course.

There were no Sanitary Sewer Overflows (SSOs) in 2020.

ATTACHMENT F

Sewage Pumping Stations

[25 Pa. Code § 94.12(a)(7)]

There are currently twelve (12) pumping stations in operation that convey sanitary sewage flow within the Township. In 2018 Frame Ave Pump Station was abandoned/demolished and all flow was diverted to the newly constructed Planebrook Pump Station. The twelfth pump station is associated with the Malvern Hunt WWTP, which is covered under its own Chapter 94 Report

All pump stations, except Mill Lane, have two pumps that alternate lead-lag. The Mill Lane Pump Station has three variable speed pumps. Two pumps operate and one pump is standby.

Only the Mill Lane, Wilburdale and newly constructed Planebrook Pump Station are equipped with a magnetic flow meter to measure the pump station flows. Flow at the other eight (8) pump stations are calculated based on the monthly pump run-time data multiplied by the pump design capacity.

Township staff visits all pump stations on a regular basis to determine the condition and document the flow. If a discrepancy is noted during these visits, the Township investigates the cause and takes appropriate action. Heavy maintenance and repairs are handled by outside personnel under contract with the Township. The emergency generators are checked for readiness by exercising the units once a week.

All Township pump stations are equipped with emergency alarms. In the event of an alarm, an automatic dialer contacts Township personnel to alert them of the condition.

ATTACHMENT F

East Whiteland Township Pump Station Hydraulic Performance

PUMP STATION	PUMP STATION NO.	WQM PART 2 PERMIT NUMBER	NO. OF PUMPS [3]	ANNUAL AVERAGE PERMITTED CAPACITY (gpd)	HYDRAULIC DESIGN CAPACITY (excluding capacity of backup pump) (gpm)	STATION CAPACITY (gpd)	PUMP #1		PUMP #2		PUMP #3		PUMP MAX RUN TIME	ANNUAL AVERAGE FLOW (gpd)	MAX DAILY FLOW (gpd) [6][7]	HYDRAULIC RATIO	PEAKING FACTOR	2-YEAR ANNUAL AVERAGE FLOW (gpd)	2-YEAR MAX DAILY FLOW (gpd) [8]
							AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)							
Deer Run [5]	P.S. 1		2	23,450	90	129,600	52.7	17,973	55.3	18,929			157	9,099	28,260	1.107	3.11	10,074	31,288
Mill Lane [4]	P.S. 2		3	2,073,600	1754	2,525,760	294.5		283.0		268.5		756	718,197	2,652,048	1.107	3.69	795,157	2,936,234
Wilburdale [4]	P.S. 3		2	623,502	930	1,339,200	74.8		73.1				164	125,767	305,040	1.107	2.43	139,243	337,727
Lee Boulevard [5]	P.S. 4		2	350,000	470	676,800	126.1	45,033	129.8	46,330			284	117,646	266,960	1.107	2.27	130,252	295,567
Meadowview [5]	P.S. 5		2	115,200	80	115,200	119.3	42,159	91.8	32,235			363	16,306	58,080	1.107	3.56	18,053	64,304
Flat Road [5]	P.S. 6		2	427,500	275	396,000	14.5	5,280	14.3	5,238			46	7,925	25,300	1.107	3.19	8,774	28,011
Lapp Road [5]	P.S. 7		2	472,000	315	453,600	77.1	27,485	80.7	28,789			199	48,565	125,370	1.107	2.58	53,769	138,804
Westgate [5]	P.S. 8		2	890,000	700	1,008,000	54.8	21,176	55.1	19,784			199	78,553	278,600	1.107	3.55	86,971	308,454
Church Road [5][9]	P.S. 9		2	700,000	540	777,600	15.4	4,611	12.2	4,389			129	13,315	139,320	1.107	10.46	14,742	154,249
Frame Avenue [1]	P.S. 10		2																
Hillbrook Circle [5]	P.S. 11		2	250,000	295	424,800	120.6	41,346	110.4	37,986			282	64,118	166,380	1.107	2.59	70,988	184,209
King Road [5]	P.S. 12		2	250,000	258	371,520	104.1	36,517	88.3	30,746			397	47,545	204,852	1.107	4.31	52,640	226,803
Malvern Hunt [2]	P.S. 13		2																
Planebrook Road [4][5]	P.S. 14		2	151,325	394	567,360	61.3	22,442	47.1	17,247			121	42,842	95,348	1.107	2.23	47,433	105,565

[1] Pump Station Abandoned November 30, 2018; All flows were diverted to Planebrook Road Pump Station

[2] Pump Station included under MVH Chapter 94 Report

[3] Two pumps alternate lead-lag at each pump station, except Mill Lane Pump Station, which was upgraded to a three-pump system

[4] Annual Average Flow based on meter data

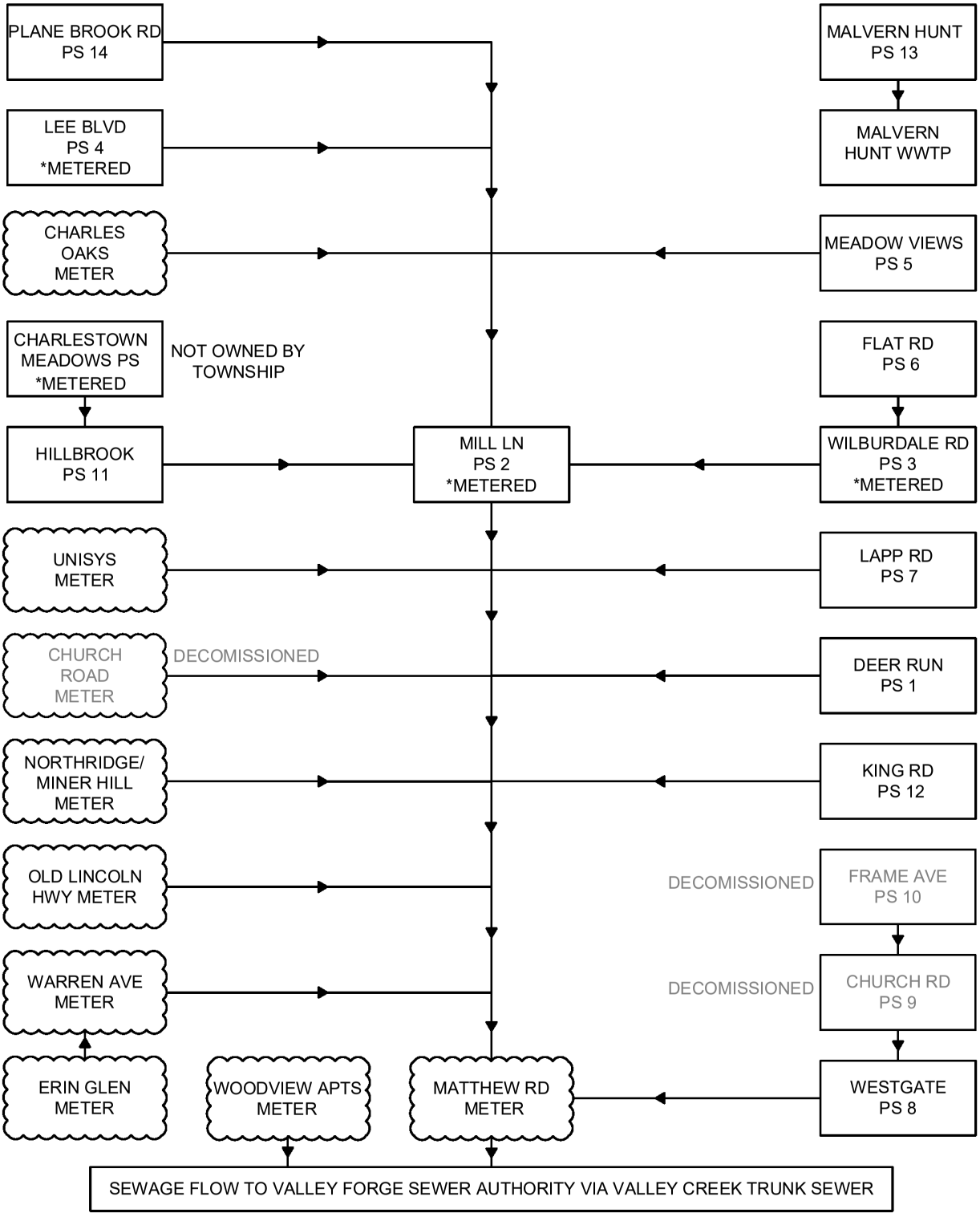
[5] Annual Average Flow based on pump run times

[6] Maximum flow at each pump station with one pump out of service that can handle peak instantaneous flow.

[7] Mill Lane Pump Station upgraded in October 2013 to three-pump system. Maximum flow with two pumps that can handle peak instantaneous flow.

[8] 2-year Annual Average Flow x Peaking Factor (Present Maximum Daily Flow to Annual Average Flow ratio)

[9] Existing Pump Station was taken out of service on March 13, 2020. Data reflects flows from January 1, 2020 through March 13, 2020.



PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

EAST WHITELAND TOWNSHIP
CHAPTER 94 REPORT

ATTACHMENT F
PUMP STATION FLOW CHART

EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, PA 19355

PROJECT	EWPTX00030
DATE	2021-02-19
DRAWING SCALE	N.T.S
DRAWN BY	RG
APPROVED BY	CF

SK-0001

ATTACHMENT G

Industrial Waste

[25 Pa. Code § 94.12(a)(8)]

A. A copy of the Townships ordinance regulating industrial waste discharges to the sewer system is as follows

§154-107 Exclusion of industrial waste

Industrial wastes may be discharged into the sewer system only pursuant to written agreement with the Township and the Valley Forge Sewer Authority and upon obtaining an industrial waste discharge permit from Valley Forge Sewer Authority; provided that rules, regulations and acceptability standards which may from time to time be adopted by the Township and Valley Forge Sewer Authority prescribed for the pretreatment of Industrial Waste are fully complied with to the satisfaction of the Township and Valley Forge Sewer Authority. Industrial wastes to be acceptable for collection and/or treatment must not exceed the characteristics set forth in Part 2, Sewer Use, of this Chapter 154. Industrial waste surcharges will be imposed and collected by the Valley Forge Sewer Authority and will be in addition to the rentals imposed herein.

B. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township. Industrial customers monitor their own systems and send quarterly records to the Valley Forge Sewer Authority (VFSA) to verify compliance with the Authority's effluent guidelines. VFSA and the Township have agreements in place with each industrial customer which establishes their discharge guidelines, responsibilities for maintaining effluent quality and consequences should they fail to comply with the agreement. In addition, both entities have the right to spot check the industrial effluent at any time to verify compliance. VFSA samples the Township's effluent at such time it considers it necessary to check compliance with the inter-community agreement.

C. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township.

EDWARD B. WALSH & ASSOCIATES, INC.
Complete Civil Engineering Design / Consultation Services
Whiteland Business Park
855 Springdale Drive, Suite 202
Exton, PA 19341

March 8, 2021

Mr. Richard D. Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
610.935.1553

Re: Borough of Malvern 2020 Chapter 94 Report
EBWA Project No. 2780-16

Dear Mr. Taylor:

In accordance with the Valley Forge Sewer Authority's request, enclosed please find Malvern Borough's Chapter 94 Report for the year 2020. The report should contain the necessary information required to assist the Authority in the preparation of your Annual Report under Chapter 94 of Title 25, Section 94.12 Municipal Wasteload Management.

Also enclosed per your request are an updated Growth Projection Table and a Flow Projection Table for the Borough of Malvern as of December 31, 2020.

If you should have any questions require additional information, please do not hesitate to contact me.

Very truly yours,
EDWARD B. WALSH & ASSOCIATES, INC.
Malvern Borough Engineers

Daniel H. Daley, P.E.

encl.

cc: Chris Bashore, Borough Manager, w/ encl.

Chapter 94 Municipal Wasteload Management Annual Report

2020 Chapter 94 Annual Report
Borough of Malvern
Valley Forge Sewer Authority
Chester County

Prepared by:
Edward B. Walsh and Associates, Inc.
855 Springdale Drive, Suite 202
Exton, PA 19341

Prepared for:
Valley Forge Sewer Authority
Valley Forge Wastewater Treatment Plant
333 Pawling Road
Phoenixville, PA 19464

Preparer

Daniel H. Daley

Signature
Name: Daniel H. Daley, P.E.
Company: E. B. Walsh & Associates, Inc.

Permittee

Christopher Bashore

Signature
Name: Christopher Bashore
Permittee: Malvern Borough

March 8, 2021

Table of Contents

TOPIC **PAGE**

1. INTRODUCTION

Malvern Borough currently has an allocation of 543,650 GPD at the Valley Forge Sewer Authority Regional Treatment Plant. All of Malvern Borough is designated as being within the Public Sewer Service Area. Malvern Borough is the Owner and Operator of the Collection and Conveyance Systems within the Borough.

2. HYDRAULIC AND ORGANIC LOADINGS

Valley Forge Sewer Authority conducts influent sampling for BOD_5 and hydraulic loadings at the wastewater treatment plant.

Malvern Borough's average sewage flow for 2020 was 393,613 GPD, as per Valley Forge Sewage Treatment Flow Report for 2020 (supplied to the Borough on February 19, 2021).

Malvern Borough estimates their BOD_5 as follows:

The total number of pounds of BOD_5 collected each day is estimated to be 1,109.1 pounds per day, which was calculated by using a factor of 0.17 pounds per day per capita X (times) the estimated number of persons.

1,864 EDU's x 3.5 Persons = 6,524 Persons

6,524 X 0.17 = 1,109.1 Pounds

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The 2020 Average Sewage flow of 393,613 GPD excludes:

- 2 EDU's from East Whiteland Township which flow to the Old Lincoln Highway sewage meter.
- EDU's from East Whiteland Township's portion of Erin Glen Subdivision which flows to the Warren Avenue sewage meter.

The 2020 Average Sewer flow of 393,613 includes:

- Unmetered flow from Malvern Prep (15 EDUs) and Village of Pennwyck – Vintage Subdivision (12 EDUs) to Willistown Township.

A summary of the total number of EDU's is as follows:

EQUIVALENT DWELLING UNIT (EDU) SUMMARY

	METERED EDU'S	UNMETERED EDU'S+	TOTAL EDU'S
2016	1796	27	1823
2017	1802	27	1829
2018	1805	27	1832
2019	1828	27	1855
2020	1837	27	1864

+Unmetered EDU's - Discharge into Willistown Township

Malvern Prep	15 EDUs
Village of Pennwyck - Vintage Subdivision	12 EDUs
Total	27 EDUs

ADDITIONAL EDU'S

2016	F Joseph Rubino-361 Old Lincoln Hwy. (2-4-43)	1
2017	Gables - 217 S. Warren Ave. (2-7-36)	2
	F Joseph Rubino - 361 Old Lincoln Hwy. (2-4-43)	1
	Hughes 326 Old Lincoln Hwy. (2-4-91.1)	1
	347 Old Lincoln Hwy. - Rubino Holdings (2-4-41)	2
2018	Sheet (323 Old Lincoln Hwy.-Hopkins (2-4-38)	2
	Lagrie - Building Permits (2-4-34 - Lot 1)	1
2019	400 E. King Street - Brick and Brew	8
	203 Management LLC. - 156 W. King Street	5
	Wolfe - 151 Channing Avenue	1
	Gables - 217 S. Warren Ave.	2
	Chambers - 346 E. King Street	7
2020	11 Griffith Ave Subdivision (17 Griffith Ave)	1
	Rubino (13 Lovers Ln Sub) (15 & 17)	2
	Lagrie - Building Permits (353 Old Lincoln Hwy.)	1
	51 Ruthland Ave. Subdivision (53, 55, 57 & 59)	4
	Renehan - 320 W. First Ave Permit Plan	1

During the next five (5) years, the number of EDU's is projected to increase as follows:

Year	Projected Number of EDU's to be Added in Calendar Year		Accumulative Total of the Number of EDU's *	Accumulative Total of Sewage Flow MGD
2020	---		1864	0.394
2021	13	*3575 GPD*	1877	0.397
2022	5	*1375 GPD*	1882	0.399
2023	17	*4675 GPD*	1899	0.403
2024	21	*5775 GPD*	1920	0.409
2025	15	*4125 GPD*	1935	0.413
Total:	71	19525 *GPD*		

The increase in the number of equivalent dwelling units and associated sewage flow was derived in the following manner:

1. All residential, commercial, and industrial facilities that are presently connected to the sewer system are included in the 2020 metered flow. Uncompleted developments and subdivisions and proposed developments and subdivisions under consideration have their associated sewage flow projected into each of the above referenced calendar years.

2. For each additional EDU, a sewage flow of 275 gallons per day (GPD) was used for planning purposes.

For the period of 2021 to 2025, the additional sewage flow was based upon the development of proposed and subdivisions and developments along with unanticipated projects in the manner indicated on the attached Table 1.0 entitled "Malvern Borough 2020 Growth Projection Table December 31, 2020." The location of each of the various subdivisions and developments is shown on the attached "Location Map" for Malvern Borough's 2020 Chapter 94 Report.

4. SEWER EXTENSIONS

a. No sewer main extensions were completed in 2020.

b. *A map showing sewer extensions approved or exempted in the past year in accordance with the PA Sewage Facilities Act (35 P.S. §§ 750.1—750.20) and Chapter 71 (relating to administration of the sewage facilities program), but not yet constructed.*
See Attached Map

c. *A map showing all known proposed projects which require public sewers but are in the preliminary planning stages.*
See Attached Map

d. *A list summarizing each extension or project.*
See Table 1.0

e. If a sewer extension approval or proposed project includes schedules for completing the project over time, the list should describe the projects projected build-out over time.
See Table 1.0

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

Discussion of I & I Problems

Malvern Borough monitors the flow rates in their sewer system in order to detect sources of infiltration, and when sources of infiltration are detected, Malvern Borough takes the necessary measures to remove the cause and source of the infiltration. The balance of Malvern Borough's sanitary sewer system is in good condition. The amount of infiltration flowing into the sanitary sewer system was estimated to be at the rate of fifty (50) gallons per inch of diameter of pipe per 24 hours. Using the above described infiltration rate, the total estimated amount of infiltration into the sanitary sewer system was calculated to be as indicated below:

8" sanitary sewer 33,219 L.F. = 6.29 miles X 400 =	2,516 gallons
10" sanitary sewer 4,327 L.F. = 0.82 miles X 500 =	410 gallons
	2,926 gal/day

Measures Taken to Alleviate Infiltration Problems

The sewage flows listed in Item 1 above, Hydraulic and Organic Loading Contribution do not exceed Malvern Borough's allocated sewage flow capacity which is 0.544 MGD.

Malvern Borough will continue to take the necessary measures to eliminate infiltration problems.

Monitoring, Maintenance and Inspection of System

Twice a year a manhole inspection is performed. Once every two years or when necessary; selective video inspections of sections of the sanitary sewer system are made where infiltration problems are suspected. Low-lying manholes are

checked periodically for surface water infiltration. There are four (4) employees available for maintenance.

The Borough flow meters (installed in early 2015) were maintained / calibrated quarterly.

In 2019, the Borough replaced 2,400 linear feet of 4" forcemain from the Ruthland Avenue Pump Station to the gravity sanitary sewer manhole on Channing Avenue. The cost of this project was approximately $288,000. Also, a flow meter was installed on the Ruthland Avenue Pump Station.

Pump Station Maintenance

Stations are checked twice a day. Every week air tanks are drained in stations. Every six months pumps and motors are lubricated. There are four (4) people available for maintenance on the sanitary sewer system. In case of emergency, there is always one (1) person available on stand-by duty.

Overall Condition of Malvern Borough's Sanitary Sewer System

Malvern Borough continues to monitor and maintain their sanitary system and the overall condition of the system is good.

6. CONDITION OF THE SEWER SYSTEM

This section requires a discussion of the condition of the sewer system, including portions where conveyance capacity is exceeded or will be exceeded in the next 5 years. It should include a discussion of those portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate:

a.	*Bypassing;*	**None Known**
b.	*Combined sewer overflows;*	**None Known**
c.	*Sanitary sewer overflows;*	**None Known**
d.	*Excessive infiltration;*	**None Known**
e.	*Other system problems.*	**None Known**

Discussion of available existing and future capacity.

f. *The age of the sewer system.*

The majority of the sanitary sewer system was installed in 1975-1976.

g. *The type of material of which the system is made (i.e., brick, vitrified clay, PVC, Orangeburg, etc.).*

The existing sanitary sewer system consists of terracotta pipe. Any recent extensions or repairs to the system were made with PVC pipe.

h. *An analysis that determines whether the existing sewer lines are sized properly for the connected population.*

Based on existing flow data for the Borough as compared to the projected flow, no known capacity issues are anticipated. As re-development or new development is proposed, the capacity of the system is analyzed to ensure capacity.

i. A discussion of any portions of the system that should be repaired, replaced or rehabilitated, including a timeframe by which any proposed actions are expected to be completed.

At this time there are no portions of the system that are known to be in need of repair or replacement.

Discussion regarding any portions of the sewer system in which surcharging occurs:

j. How often does the system surcharge in each location?
There are no known areas of the system that have surcharged.

k. What size storm events create surcharging sewer lines?
Not Applicable

l. What is the cause of the surcharging?
Not Applicable

m. Sewer systems that surcharge during wet weather indicate a lack of hydraulic capacity and are considered to be in a projected hydraulic overload. For such conditions, permittees should submit a CAP and CMP with the annual report, as required by 25 Pa Code § 94.22.
Not Applicable

Provide a list of all SSOs that occurred during the calendar year, including their cause and location (a copy of the Southeast Regional Office's SSO Report Form submitted by the permittee is acceptable). SSOs related to wet weather should be discussed:

n. Explain if there is a history of SSOs at each reported location. If a trend of SSOs at specific locations during rain events is documented, this indicates a lack of hydraulic capacity and is considered a hydraulic overload condition.
There are no known areas of the system that have had an overflow.

o. *Why are SSOs occurring at each location? Has a hydraulic analysis been conducted, and if so, what were the results and recommendations for corrective action?*
Not Applicable

p. *Provide an analysis of flow metering that has been conducted.*
Not Applicable

q. *Sewer systems that experience SSOs are considered to be in an existing hydraulic overload. A CAP and CMP should be submitted with the annual report, as required by 25 Pa Code § 94.21.*
Not Applicable

The Department strongly recommends that existing capacity be documented with flow meter data. Whether flow meters are in place, or are proposed to be used throughout the system to gather data on a sub-basin approach-existing capacity should be documented with data that describes actual flow conditions during dry-weather and wet-weather conditions:

r. *Dry weather flows should be monitored to document baseline flows and for comparison purposed, to determine the extent of I/I within the collection system.*
The Borough had the five gravity flow metering stations within the Borough replaced. The meters were brought online February 21, 2015 and fully functional by the end of the First Quarter 2015.

In addition, a new meter was installed in the fall / winter of 2019 at the Ruthland Avenue Pump Station to further evaluate the Borough flows.

s. *Wet weather capacity should be determined by documenting the peak instantaneous (or peak hourly) flow rates as compared to the hydraulic carrying capacity of the sanitary sewer (i.e., Manning's equation).*

The Borough has plans to further evaluate peak flows during wet weather conditions and complete analysis related to I/I.

The Borough Engineer has begun assembling the data for the hydraulic carrying capacity of the existing sewer.

7. SEWAGE PUMPING STATIONS

Pumping Stations

There are two pump stations and two ejector stations located within Malvern Borough's sanitary sewer system.

	PUMPING STATION 1	PUMPING STATION 2	EJECTOR STATION 1	EJECTOR STATION 2
Rated Max. capacity:	500 GPM @ 120' TDH	200 GPM @ 135' TDH	50 GPM @ 35' TDH	100 GPM @ 56' TDH
Current Ave. daily flow	101.4 GPM *(1)*	43.2 GPM *(1)*	*(2)*	8 GPM *(3)*
Current peak flow	253.6 GPM *(4)*	108.1 GPM *(4)*	*(2)*	32 GPM *(3)*
Peak instantaneous flow during wet weather:	(2)	(2)	*(2)*	*(2)*
Footnotes:				
(1)	Not metered flow. Calculated on EDU basis. 781 EDU's at Station No. 1 and 333 EDU's at Station No. 2 (187 GPD_{AVG} per EDU based on Warren Avenue metered flow after deduction for Erin Glen metered flow).			
(2)	The Borough is currently working on providing information regarding these Items.			
(3)	The numbers for this Ejector Station are based on the Design Calculations			
(4)	Calculated average daily flow multiplied by a peak factor of 2.5			

8. INDUSTRIAL WASTES

If applicable, the report on industrial wastes (IW) should include:

a. *A copy of an ordinance or regulation governing IW.*
Industrial Wastes are ultimately governed by the Rules and Regulations of the Valley Forge Sewer Authority. The Rules and Regulations of Valley Forge have been adopted by Adopted by Malvern Borough via Ordinance No. 2002-2 and 2009-2, see attached.

b. *A discussion of the permittee's program for surveillance and monitoring of IW discharges to the sewer system during the past year.*
No specific program for surveillance / monitoring exists. The Borough's Public Works Department monitors the sewer system on a regular basis and if issues are observed, they are reported to the Public Works Director and the issue is investigated.

c. *A discussion of specific problems in the sewer system or at the WWTF, known or suspected to be caused by IW discharges and a summary of steps being taken to alleviate or eliminate the problems.*
No known issues within Malvern Borough's sewer system.

d. A list of any such industries known to be discharging wastes that create a problem and actions taken to prevent potential or recurring problems caused by the IW dischargers.
Not Applicable

e. *Provide documentation regarding any actions taken against IW dischargers.*
Not Applicable

9. CORRECTIVE ACTION PLAN

Malvern Borough does not have an existing or projected overload condition within their collection and or conveyance system; therefore a CAP or CMP Plan is not required.

10. CALIBRATION REPORTS

Allied Controls conducts quarterly calibrations for the flow meters within Malvern Borough. The Calibrations are done via a contract through Valley Forge Sewer Authority. The calibration reports are attached to this Chapter 94 Report.

ARTICLE III

Industrial Waste, Holding Tank Waste and Septage [Adopted 9-20-1994 by Ord. No. 94-4 (Part 11, Ch. 2, Art. B, of the 1975 Code of Ordinances)]

§ 168-11. Purpose; policy.

A. This article requires all users and use of the Borough's sewer facilities to comply with the regulations (collectively "applicable regulations" or any one individually "applicable regulation") promulgated by the Valley Forge Sewer Authority (VFSA), the United States Environmental Protection Agency (USEPA), which include, without limitation, the pretreatment standards promulgated by the USEPA as set forth in 40 Code of Federal Regulations (CFR) 403 et seq. and the Pennsylvania Department of Environmental Resources (PADER); and

B. This article establishes the means of enforcing those regulations.

§ 168-12. Amended VFSA regulations adopted. [Amended 6-18-2002 by Ord. No. 2002-2[1]; 2-17-2009 by Ord. No. 2009-2; 12-21-2010 by Ord. No. 2010-5]

The standards established by the Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage, dated May 31, 2002, and amended by Resolution No. 2 of 2008 of the Board of Directors of the Valley Forge Sewer Authority (VFSA) and further amended by Resolution No. 1 of 2010, are hereby adopted as the minimal standards of the Borough, applicable to all users and use of the Borough’s sewer facilities, and any user or use of the Borough facilities must comply with all of the VFSA's requirements with respect to these amended regulations, as well as all other applicable regulations.

§ 168-13. Violations.

Without limiting any other section hereof, a person (as defined by the VFSA regulations) violates this article:

A. By discharging sewage or waste into the Borough's sewage facilities when such discharge is not in compliance with this

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1. **Editor's Note: Section 2 of this ordinance provided for the deletion of existing Appendix XXII of the 1975 Code of Ordinances and replacement with a copy of the "Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage dated May 31, 2002." Said document has not been codified; it is on file in the office of the Borough Secretary.**

article, any applicable industrial permit requirements or National Categorical Pretreatment Standards, any applicable regulation or any Borough order; or

B. By otherwise failing or refusing to comply in any way with the VFSA regulations, including but not limited to achieving all permits, licenses and approvals and filing all reports, when and as required.

§ 168-14. Solicitor authorized to commence action; cost of action.

The Borough Solicitor is authorized to commence actions against any violator of this article for appropriate legal and/or equitable relief from the violation. If the Borough is granted any relief in any such action, the violator shall, in addition to any fine or penalty, pay all the Borough's costs thereof, including but not limited to attorney fees.

§ 168-15. Penalties.

A. Any person (as defined by VFSA regulations) who violates any provision of this article shall, upon conviction thereof, be sentenced to pay a fine of not more than $1,000 and/or to imprisonment for a term not to exceed 90 days. Every day that any violation of this article continues shall constitute a separate offense.

B. Any person (as defined by VFSA regulations) who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this article or any industrial waste permit or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required under this article shall be in violation of this article and may be prosecuted in accordance with the provisions of the Pennsylvania Crimes and Offenses Code, 18 Pa.C.S.A. § 4901 et seq. pertaining to perjury and falsification in official matters.

§ 168-16. Severability.

If any provision, paragraph, word or section of this article is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words and sections of this article shall not be affected and shall continue in full force and effect.

§ 168-17. Repealer.

All other ordinances or parts of other ordinances and provisions of this Code inconsistent or conflicting in any part with this article are hereby repealed to the extent of such inconsistency or conflict.

§ 168-18. Adoption of future amendments of VFSA regulations. [Added 6-18-2002 by Ord. No. 2002-2]

In the event that the Valley Forge Sewer Authority further amends its rules and regulations, or otherwise undertakes regulatory action governing wastewater treatment within the Borough of Malvern, said proposed regulations must be forwarded to and adopted by Borough Council prior to becoming effective.

TABLE 1.0 BOROUGH OF MALVERN 2020 GROWTH PROJECTION TABLE
December 31, 2020

ID	Property Owner / Project	Tax Parcel	Tot. Est. EDU's	EDU's Previously Connected	EDU's Connected in 2020	EDU's to be Connected	EDU's REMAINING TO BE CONNECTED				
							2021	2022	2023	2024	2025
	Completed Projects										
1	Santoleri	2-4-262.1	1	1	0	0					
2	Hibernia Homes (Formerly Yasgur-Levis)	2-4-71	1	1	0	0					
3	Hibernia Homes (Formerly Yasgur-Levis)	2-4-67	2	2	0	0					
4	Greenstone (Formerly TAG)	2-6-102,101, 91.1	5	5	0	0					
5	Hibernia Homes (Formerly Building Block)	2-4-69	1	1	0	0					
6	Rittenhouse	2-4-337.2	1	1	0	0					
9	Buerkel (1 Previously Approved & 2 New EDU's)	2-3-3.1E	3	3	0	0					
11	East King Street Redevelopment	2-4-148	128	128	0	0					
22	Frindt	2-3-24	1	1	0	0					
25	Greenstone (Formerly Deflavis)	2-6-91	1	1	0	0					
27	Hughes 326 Old Lincoln Hwy.	2-4-91.1	1	1	0	0					
29	Pots of Green	2-3-22	1	1	0	0					
32	SEPTA R5	2-3-84 E	1	1	0	0					
33	101 Church Street (Andrews Management)	2-4-287	3	3	0	0					
38	347 Old Lincoln Highway (Rubino Holdings)	2-4-41	2	2	0	0					
39	Moffat-144 Church Street (TAG Builders)	2-2-27	4	4	0	0					
40	F Joseph Rubino (361 OLH)	2-4-43	2	2	0	0					
13	Sheets (323 OLH - Hopkins)	2-4-38	2	2	0	0					
45	400 E. King Street - Brick and Brew	2-4-355	10	10	0	0					
43	203 Management LLC. - 156 W. King Street	2-3-29, 29.1	5	5	0	0					
50	Wolfe - 151 Channing Avenue	2-4-235.1	1	1	0	0					
44	51 Ruthland Ave. Subdivision (Haly)	2-4-360.1	4	0	4	0					
46	11 Griffith Ave Subdivision - Renehan	2-3-25	1	0	1	0					
47	Renehan - 320 W. First Avenue Permit Plan	2-6-96.1	1	0	1	0					
42	Chambers - 346 E. King St	2-4-297	7	7	0	0					
24	Rubino (Hopkins - 13 Lovers Lane Subdivision)	2-4-43.1	2	0	2	0					
	Projects Approved but Not Complete										
7	Cifa	2-4-84	1	0	0	1				1	
8	Bean (Formerly approved as part of Hough - Loew)	2-3-3	1	0	0	1					1
10	Lagrie - Building Permits	2-4-34, 36, 2-1-35	3	1	1	1	1				
34	Malvern Prep (Maintenance Building)	2-7-34 E	1	0	0	1					1
35	Simmons	2-4-105	1	0	0	1					1
37	Gables-217 S. Warren Ave.	2-7-36	5	4	0	1			1		
49	Traynor Capital Management - 418 E. King Street	2-4-356	5	0	0	5	5				
48	523 Monument Ave. Subdivision - Coughlin	2-6-37	1	0	0	1	1				

							EDU's REMAINING TO BE CONNECTED				
ID	Property Owner / Project	Tax Parcel	Tot. Est. EDU's	EDU's Previously Connected	EDU's Connected in 2020	EDU's to be Connected	2021	2022	2023	2024	2025
	Projects being Reviewed										
	n/a										
	Anticipated Projects										
14	Remed	2-9-1	7	0	0	7					7
36	Gugliemi (connect existing garage)	2-4-36	1	0	0	1			1		
41	ZMC Partners, LP	2-4-204,205,206	25	0	0	25			10	15	
51	631 Monument Avenue (convert from cess pool)	2-6-31	1	0	0	1	1				
	Vacant Parcel Analysis*										
15	Francis (Formerly Longford/Old Lincoln)	2-4-68	6	0	0	6					
17	Atwin	2-3-1.1	6	0	0	6					
18	Birchell	2-3-7	2	0	0	2					
19	Ilex	2-3-29.1	1	0	0	1					
20	Buckley	2-4-276	2	0	0	2					
23	Finegan	2-4-266.1	1	0	0	1					
26	Priddy	2-7-8	1	0	0	1					
36	Gugliemi (redevelopment)	2-4-36	2	0	0	2					
	Miscellaneous										
30	Adaptive Reuse/ Change in Use		150	0	0	150	5	5	5	5	5
31	Potential Redevelopments**		420	0	0	420					
	TOTAL EDU's		**834**	**188**	**9**	**637**	**13**	**5**	**17**	**21**	**15**

* Sewage flows for the Vacant Parcels were determined by the Maximum allowable density based on current zoning.

** Potential Developments include Malvern Prep site (97 acres) and the Malvern Retreat site (106 acres). Based upon current zoning regulations, a permitted use on both parcels is a retirement community with 8 du/acre. Malvern Prep permitted density based upon zoning exceeds 440 dwelling units. Malvern Retreat permitted density based upon zoning also exceeds 440 dwelling units.

TABLE 2.0

BOROUGH OF MALVERN 30-YEAR FLOW PROJECTIONS December 2020
VALLEY FORGE SEWER AUTHORITY
2020 CHAPTER 94 REPORT

WASTEWATER FLOW PROJECTIONS

	PRESENT 2020	5-YEAR 2025	10-YEAR 2030	20-YEAR 2040	ULTIMATE 30-YEAR 2050
GPD	393,613	413,138	454,388	502,513	528,638
EDUs	1864	1935	2085	2260	2355
New EDUs	---	*71*	*150*	*175*	*95*

NOTES:

1. **Includes unmetered flow into Willistown Township** and excludes 2 EDU's from East Whiteland Twp and Erin Glen Flow from East Whiteland Twp.
   Malvern Borough has 27 EDUs that flow unmetered into Willistown Twp.
   15 EDUs - Malvern Prep= 4,125 gpd
   12 EDUs - Vintage Development = 3,300 gpd
   Total = 7,425 gpd
2. Projected flows based upon a flow of 275 gallons per day (gpd) per equivalent dwelling unit (EDU).

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
			94.12 Annual Report	
		X	**Section (a)(1)** A line graph depicting monthly average flows (expressed in millions of gallons per day (MGD)) for each month for the past 5 years.	
		X	The graph should include projected flows for the next 5 years.	
		X	The graph shall include a line depicting the hydraulic design flow in MGD.	
		X	**Section (a)(2)** A line graph depicting monthly average organic loading (expressed in pounds per day of BOD5) for each month for the past 5 years.	
		X	The graph shall include projected loadings for the next 5 years.	
		X	The graph shall include a line depicting the organic loading design of the plant in lbs/day BOD5.	
		X	**Section (a)(3)** A discussion of the basis for the flow and organic loading projections to the plant as referred to in Sections a(1) and a(2).	
		X	A description of the time needed to expand the plant to meet the load projections, if applicable.	
		X	Data used to support the projections are included in an appendix to the report.	
		X	**Section (a)(4)** A map showing all sewer extensions constructed in the past calendar year.	
		X	The map should show sewer extensions approved or exempted in the past year in accordance with 537 but not yet constructed.	**See attached map**
X			The map should show all known proposed projects that require public sewers but that are in the preliminary planning stages.	**See attached map in report and Table 1.0**
X			A list accompanying the map summarizing each extension or project and the population to be served.	**See Table 1.0**

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
X			The list should include any schedules describing how the project will be completed over time, and the effect that this built-out-rate will have on the populations served.	**See Table 1.0**
X			**Section (a)(5)** A discussion of the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, and infiltration/inflow monitoring.	**See Item 5 of the report**
	X		A calibration report shall be included for all flow measuring, indicating and recording equipment within the collection and conveyance system. Calibrations should occur annually.	**See Item 10 of the report**
X			A discussion of the maintenance and control of combined sewer regulators during the past year.	**See Item 5 of the report**
X			**Section (a)(6)** A discussion of the condition of the sewer system, including portions of the sewer system where conveyance capacity is being exceeded or is projected to be exceeded in the next 5 years.	**See Item 6 of the report**
	X		Existing capacity should be documented with actual metering of present maximum flows. If not already existing, the permittee should consider the best placement of flow meters to document the capacity of major interceptors (greater than 10 inches in diameter) and/or where lines cross municipal borders. A discussion of present maximum flows should be documented with hourly or instantaneous peak readings taken during major storm events (greater than 1.0 inch of rain). Auto dialers may be installed to alert of high flow conditions. The Chapter 94 Report should compare the peak instantaneous flow for each major storm event to the design hydraulic conveyance capacity of the sewer in order to determine whether sufficient capacity is available. The ratio of peak (hourly or instantaneous) to annual average flows should be determined to assess the actual peaking factor for the system.	**See Item 6 of the report**

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
X			A discussion of portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate bypassing, combined sewer overflow, sanitary sewer overflow, excessive infiltration, and other system problems.	**See Items 5 and 6 of the report – There are no known problems within the Borough's system**
X			**Section (a)(7)** A discussion of the condition of sewage pumping Stations, including: A comparison of the maximum pumping rate with present maximum flows.	**See Item 7 of the report**
	X		Present maximum flows should be documented with the peak hourly or instantaneous readings taken during major storm events (greater than 1.0 inch of rain). Auto dialers may be installed to alert of high flow conditions.	**The Borough is currently working on providing this information**
	X		A discussion of metered flow data obtained during the report's calendar year to illustrate the ratio of peak flow to annual average flow. The permittee should use these figures to determine the actual peaking factor for the pumping station.	**The Borough is currently working on providing this information**
	X		Provide documentation that the pump station can convey maximum flows with any one pump out of service.	**The Borough is currently working on providing this information**
	X		The projected two-year maximum flows for each station.	**The Borough is currently working on providing this information**
	X		The two-year projection should use the estimated new flows to the system (annual average flows), multiplied by the peaking factor derived from metered flow data.	**The Borough is currently working on providing this information**
		X	**Section (a)(8)** A report of industrial wastes discharged into the sewer system.	**Completed by VFSA**
X			The report shall include: **(i)** A copy of any ordinance or regulation governing industrial waste discharges into the sewer system, including a copy of any amendments adopted.	**Included in report**
		X	**(ii)** A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.	**Completed by VFSA**

Tributary Municipality
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
		X	**(iii)** A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges, including a summary of the steps being taken to alleviate or eliminate the problems, as well as pollution prevention techniques.	**Completed by VFSA**
		X	The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and actions taken to eliminate the problem or prevent its recurrence.	**Completed by VFSA**
		X	**Section (a)(9)** A proposed plan to reduce or eliminate present or projected overloaded conditions under Chapters 94.21 and 94.22.	**The Borough is not projecting any overloads**
X			**Section (b)** Permittees of sewer systems which contribute sewage flows to the plant shall submit information to the permittee of the plant as required to facilitate preparation of the annual report.	
			94.13 Measuring, indicating and recording devices.	
		X	**Section (a)** A plant which receives or will receive in the next five years, monthly average flows exceeding 100,000 gallons per day (gpd) shall be equipped to continuously measure, indicate and record the flow.	
		X	The permittee shall install the necessary equipment for those measurements within 6 months after the date when such a flow becomes evident.	
		X	Section (b) A calibration report shall be included in the annual report for flow measuring, indicating and recording equipment. Calibrations should occur annually.	

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 1 rst. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	05-13-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 06-04-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 06-04-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 06-04-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 3 rd. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	07-29-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration: 10-07-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20
Date of Calibration: 07-21-20
% of Error: Less than .2%
Comment10-07-20s: none

Corrective Action: none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8” Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration: 10-07-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	10-07-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 09-30-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 09-30-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 4 rth. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20
Date of Calibration: 12-17-20
% of Error: Less than .2%
Comment10-07-20s: none

Corrective Action: none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8” Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration: 12-27-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 12-22-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

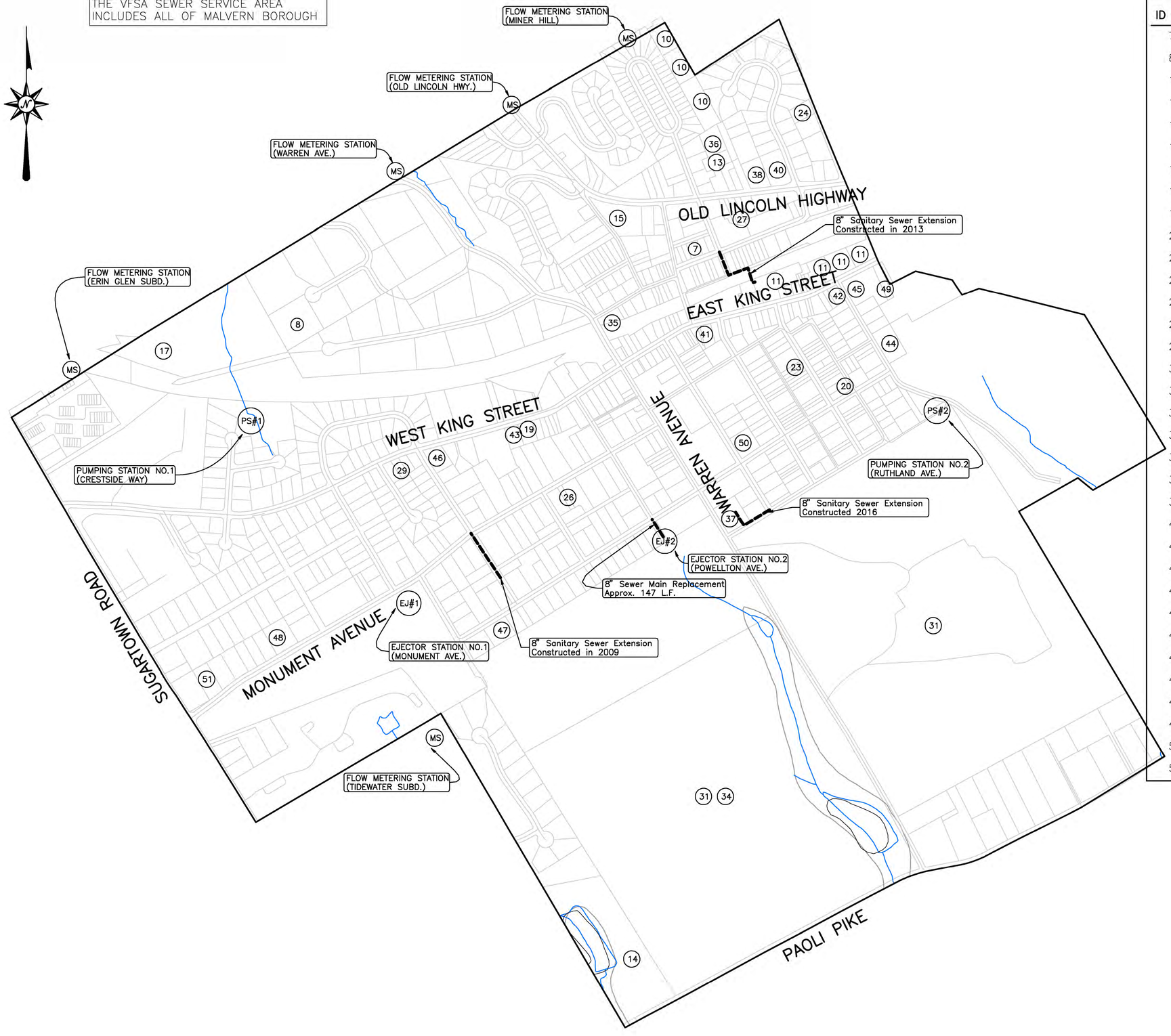
Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

NOTE:
THE VFSA SEWER SERVICE AREA
INCLUDES ALL OF MALVERN BOROUGH



ID NO.	DEVELOPMENT	TAX PARCEL
7	Cifa	2-4-84
8	Bean (Formerly approved as part of Hough - Loew)	2-3-3
10	Lagrie	2-4-34, 2-1-35,36
11	East King Street Redevelopment	2-4-148
13	Sheets	2-4-38
14	Remed	2-9-1
15	Francis (Formerly Longford/Old Lincoln)	2-4-68
17	Atwin	2-3-1.1
19	Ilex	2-3-29.1
20	Buckley	2-4-276
23	Finegan	2-4-266.1
24	Rubino	2-4-43.1
26	Priddy	2-7-8
27	Highes	2-4-91.1
29	Pots of Green	2-3-22
30	Adptive Reuse / Change in Use	Various
31	Potential Redevelopments**	Various
34	Malvern Prep Maintenance Building	2-7-34 E
35	Simmons	2-4-105
36	Gugliemi	2-4-36
37	Gables-217 S. Warren Ave,	2-7-36
38	347 Old Lincoln Highway (Rubino Holdings)	2-4-41
40	F Joseph Rubino (361 Old Lincoln Highway)	2-4-43
41	ZMC Partners, LP	2-4-204, 205, 206
42	Chambers - 346 E. King St	2-4-297
43	203 Management LLC.	2-3-29, 29.1
44	51 Ruthland Ave.	2-4-360
45	400 E. King St. - Brick and Brew	2-4-355
46	11 Griffith Ave - Renehan	2-3-25
47	Renehan - 320 W. First Avenue Permit Plan	2-6-96.1
48	523 Monument Ave. Subdivision - Coughlin	2-6-37
49	Traynor Capital Management - 418 E. King Street	2-4-356
50	Wolfe - 151 Channing Avenue	2-4-235.1
51	631 Monument Avenue	2-6-31

DEVELOPMENT LOCATION PLAN

LOCATION PLAN
FOR

MALVERN BOROUGH 2020 CHAPTER 94 REPORT

MALVERN BOROUGH — CHESTER COUNTY, PA

Edward B. Walsh & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
Whiteland Business Park
855 Springdale Drive, Suite 202
Exton, Pennsylvania 19341
Phone (610) 903-0060
Fax (610) 903-0080
www.ebwalshinc.com

Project-	2780-16
Date-	03/5/21
Scale-	NTS
Drawn-	C.E.
Checked-	D.H.D.
Sheet-	1 OF 1

Plotted: 3/5/2021 | File:F:\JB\2780-16\2021 Report\07-2780-15 CHAP 94 PLAN-2020.pro

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITIES REPORT**	Permit No.:	**PA0043974**
Mailing Address:	**333 PAWLING ROAD**	Effective Date:	**1/1/20**
City, State, Zip:	**PHOENIXVILLE, PA 19460**	Expiration Date:	**12/31/24**
Contact Person:	**Mr. Martin F. Goldberg**	Renewal Due Date:	**7/4/24**
Title:	**Operations Manager**	Municipality:	**Schuylkill Township**
Phone:	**610-935-1553**	County:	**Chester**
Email:	**mgoldberg@vfsa.com**	Consultant Name:	

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

Check the appropriate boxes:

☒ Line graph for flows attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

Check the appropriate boxes:

☒ Line graph for organic loads attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Not applicable

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Please see report following.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Please see report following.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☒ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☒ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment 2**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Martin F. Goldberg	Martin F Goldberg
Name of Responsible Official	Signature
610-935-1553	5/25/21
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Richard D. Taylor	Richard D Taylor
Name of Preparer	Signature
610-935-1553	5-25-21
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES ANNUAL REPORT
(In PADEP Format)

CALENDAR YEAR 2020

For: **THE VALLEY FORGE SEWER AUTHORITY**
MEMBER MUNICIPALITIES REPORT
CHESTER COUNTY, PENNSYLVANIA
333 PAWLING ROAD
PHOENIXVILLE, PA 19460

INTRODUCTION

Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Schuylkill, East Pikeland, and Charlestown Townships. The Member Municipalities allocation of the total treatment plant hydraulic and organic loading is 18.1 percent.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion	**Member Municipality Allocation**
Annual Average Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Hydraulic Design Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Organic Design Capacity	26,700 lbs/day	4,833 lbs/day (18.1% of total)

The Annual Average (AA) flow for 2020 for the VFSA Member Municipalities was **1.671** MGD, which is seventy-eight percent of the post-expansion AA capacity of **2.128** MGD.

The 2020 VFSA Member Municipalities wastewater treatment plant flow was generated by an average of 7,462 EDUs. The number of baseline EDUs used in the projected flow calculations is 7,521, corresponding to the 2020 end-of-year EDU count.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any three consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2020.

2. ORGANIC LOADING

The Annual Average (AA) organic loading for 2020 for the VFSA Member Municipalities was **2,787** LB/day BOD_5, which is fifty-eight percent of the post-expansion permitted AA capacity of **4,833** LB/day BOD_5. Organic loading was estimated utilizing an average value of 200 mg/L BOD_5.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2020.

3. NOT APPLICABLE

4. SEWER EXTENSIONS

The total number of EDUs connected at the end of 2020 was 7521. The EDU count at the end of the year was 215 EDUs.

During the next five years, the number of EDUs is projected to increase as follows:

2021	141
2022	159
2023	45
2024	25
2025	18

Please see the spreadsheet and graphs included in Appendix A at the end of this section.

Information and updates on the progress of the sewer extensions is presented in Table 1, below:

VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITY SEWER EXTENSIONS - 2020 CHAPTER 94 REPORT						
Development Name	**Developer**	**Municipality**	**# of new connections completed in 2020**	**Length of Sewer Cleaned and TV'd (Lineal Feet)**	**Dedication status**	**Notes**
Pickering Crossing	Southdown Homes	Charlestown Township	6	1250	Construction in progress Dedication expected in 2022	10 lots remain to be connected in 2021 & 2022 and beyond.
Spring Oak	JP Orleans	Charlestown Township	13	2850	Phases 2 & 3 dedication are completed. Phase 1 dedication is projected be completed in the fall of 2021 with recordation of ROW Agreement	19 new homes to be connected in 2021 & 2022 and beyond.
Devault Village at Spring Oak	JP Orleans	Charlestown Township	0	0	Agreements anticipated prior to star date. Expexded start fall of 2021	Received PADEP planning approval in December 2018 for 15,950 gpd.
Kimberton Glen	Toll Brothers	East Pikeland Township	55	3100	Phase 1 dedication to the Authority will be completed upon successful fulfillment of the 18-month Maintenance Warranty. Projected 2021.	81 lots remain to be connected in 2021 & 2022 and beyond. Phases 2 & 3 are currently under construction.
400 Westside	Longview	East Pikeland Township		1800	Deed of Dedication and Right-of Way agreement to Authority was completed in the fall of 2020 and recorded at Chester County.	Completed final closeout of this development project occurred in the fall of 2020 with VFSA Board approval.
Valley Forge Greene	Pulte	Schuylkill Township	8	625	Agreements are in place and sanitary sewer construction activities are in progress.	Received PADEP planning approval in February 2020 for 32 - unit townhomes totalling 8,800 gpd. To date, 24 units remain to be connected in 2021 & 2022.

5. PROGRAM for SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

In late 2019, the Authority, with their Engineer of Record, Buchart-Horn, Inc., completed a study which was documented in a report entitled, "Valley Forge Sewer Authority, French Creek Interceptor System Evaluation". The evaluation included manhole inspections and flow monitoring in various subbasins within the overall French Creek Drainage Basin. In 2020 to address items highlighted in the BH study, the Authority initiated field work to repair and improve key portions of the basin. The project activities included:

- Clearing all right-of-ways of overgrown vegetation.
- Utilizing a Global Positioning System (GPS) to locate manholes and marking all manhole locations within the study area.
- Installing portable flow meters in strategic areas to evaluate inflow and infiltration (I&I) quantities at these locations during storm events.
- Utilizing the Authority's Engineer of Record, Buchart Horn Inc., to provide manhole condition assessments according to industry-accepted methodologies.
- Utilizing a contractor to clean and televise sanitary sewers in the targeted drainage areas and to perform spot repairs.
- Installing new water proof manhole frames and covers.

In 2020, approximately 60% of the entire French Creek Pump Station sanitary sewer drainage basin including 13 miles of pipe and 302 manholes had been cleaned, televised and inspected. This work also included performing 35 spot repairs to gravity sewer pipes and manholes and installing 40 new manhole frame and covers.

Some conclusions of this work to date include the following:

- The gravity sewers and manholes appear to be in generally good condition, and while some defects were found and repaired, they were generally minor.
- An expanded maintenance program which includes identification of system defects and repair will be beneficial going forward.
- In addition to I&I related to precipitation events, there is also a relationship between groundwater level and wastewater flow in the French Creek sewer system.
- Significant additional work is needed to identify and repair I&I throughout the entire VFSA system. However, gaining significant capacity through I&I reduction may be unlikely. More important is the maintenance of system condition in order to avoid

degradation which may result in reduced capacity and increase the risk of sewer overflows. Future planning will include capacity equaling 275 gpd/edu.

In addition to continuing with the I&I activities that are described above, the additional work anticipated in the future includes the following:

- Establish and implement appropriate activities to evaluate and address potential sources of I&I from private sewer lateral connections and potentially illegal connections to the sanitary sewer system from private households. The Authority is also evaluating developing ordinances which would require, as part of the real estate transaction process, inspections of internal plumbing in customer homes to assure no illegal connections.

In 2021 the Authority intends to continue its work in the French Creek basin, as well as initiating evaluation and repair work in other parts of its overall system. A program to address manholes along stream corridors in the Pickering Creek and White Horse pumping station basins including manhole survey and inspection is planned for 2021.

In addition to the I&I Analysis and Repair activities described above, the Authority also performed two significant sanitary pipeline and manhole repairs in 2020 which are summarized below:

1. **Replacement of Gravity Sewer Line on West Pothouse Road between West Evergreen Drive and East of Potters Pond Drive from Manholes 104 to 103 (August 2020).** This gravity sewer segment, consisting of approximately 370 feet of 18" asbestos cement pipe, was identified to be partially collapsed as a result of sulfide corrosion. The Authority contracted with their on-call contractor, Blooming Glenn Construction, to perform expedited work to excavate and replace this segment with 26 SDR PVC pipe and reconnect the 2 sanitary laterals that were connected to this pipe segment. In addition, both the upstream and downstream manholes were found to be damaged as a result of hydrogen sulfide corrosion. They were rebuilt with corrosion resistant materials.

   Following this work activity, the Authority televised all of the gravity sewers on Pothouse Road between Township Line Road and the Pothouse Pumping Station. Repairs are anticipated to be performed in 2021 based on the findings of the television inspection work.

2. **Sinkhole repair at 3222 Phoenixville Pike (November 2020).** A gravity sewer segment consisting of 150 feet of 10" PVC pipe was found to be exposed as a result of significant sinkhole undermining of the pipe in an Authority right-of way. Once identified, the Authority contracted with Earth Engineering to establish the best course of action to safely stabilize the partially undermined gravity sewer line. The recommendation was to excavate and expose a significant portion of the pipe, and then stabilize the pipe with mechanical joint reinforcements and partially backfill with flow-able fill material. Once accomplished the segment was backfilled with clean soil to grade and then re-

vegetated. This work was performed for the Authority on an expedited basis by Blooming Glen Construction.

6. CONDITION OF THE SEWER SYSTEM

As indicated in Section 5 above, a conclusion of the French Creek Evaluation was that the gravity sewers and manholes in the French Creek drainage basin appear to be in generally good condition. It is the Authority's opinion that its entire system is also in a generally good state of repair, and further detailed study will occur in subsequent years.

During 2020, no bypassing occurred in the Member Municipalities sanitary sewer system. VFSA has a sanitary sewer system only, not a combined system, so no CSOs occurred. During 2020, there were three Sanitary Sewer Overflow (SSOs) which were promply reported to PADEP. These occurred on the following dates: January 25, August 4, and August 4-5. Copies of the submitted reports are in Appendix B:

In 2019 the Authority excavated to expose key locations in its force main which runs from its Pickering Pumping Station to the WWTP in order to better evaluate forcemain pipe conditions and establish recommendations for system maintenance. Results of this testing indicated a need to install a new air release valve (ARV) at a vulnerable location (which was completed in 2020). Further evaluation will be performed in 2021.

7. SEWAGE PUMPING STATIONS

Please see the table (attached) regarding VFSA member municipality pump stations. Additional flows are based on the Member Municipalities 5 year average EDU rate of 231 gpd/EDU. Data for the Maximum Day Flow has been obtained from the cloud based real time monitoring system for the pump stations from the heavy precipitation event of approximately 5.9 inches which occurred on August 4, 2020.

Overall 2020 was an above average year for precipitation with annual rainfall totals in excess of 59 inches versus average rainfall amounts of approximately 48 inches. This resulted in high maximum day flows at the pumping stations, but still below their hyrdraulic design capacities. All four of the large pump stations in VFSA's system contain three (3) pumps which enables two (2) pumps to operate simultaneously if required.

Please see the tables and graphs included as Appendices C and D which include monthly flows at the 4 major pump stations and flows at all of the Authority's pump stations in regards to rainfall events of one inch or more during 2020.

VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 HYDRAULIC LOADING
BASED ON MISSION COMMUNICATION DATA
PUMP STATION DATA

PUMP STATION NAME	No. of Pumps	PERMITTED CAPACITIES			PRESENT FLOWS 2020			PROJECTED FLOWS		
		Annual Average Permitted Capacity (gpd)	Hydraulic Capacity (excluding capacity of backup pump), (gpm)	(gpd)	2020 Annual Average Flow (gpd)	2020 Max. Day Flow (gpd)	2020 Max. Day to Avg. Day Ratio	Contributing New EDUs next 2 years	2 year Annual Avg Flow (gpd)	2 Year Max. Daily Flow (gpd)
Pickering Creek	3	2,686,560	5,597	8,059,680	1,366,193	5,298,000	3.88	147	1,406,618	5,454,765
White Horse	3	2,350,080	4,896	7,050,240	1,015,551	3,983,400	3.92	147	1,055,976	4,141,963
Pot House	3	2,040,000	4,250	6,120,000	863,957	2,973,500	3.44	147	904,382	3,112,632
French Creek	3	1,570,994	3,382	4,870,080	731,350	2,584,400	3.53	147	771,775	2,727,251
Perkiomen	2	214,920	597	859,680	79,132	553,300	6.99	24	85,732	599,448
Valley Creek	2	67,680	188	270,720	18,003	148,800	8.27	0	18,003	148,800
Kimbel Drive	2	37,440	104	149,760	17,308	56,127	3.24	0	17,308	56,127
Charlestown Rd	2	92,520	257	370,080	33,722	143,318	4.25	0	33,722	143,318
VF Woods*	2	112,680	313	450,720	62,694	250,776	3.69	0	62,694	231,588
Charestown Meadows	2	97,200	270	388,800	27,411	34,200	1.25	0	27,411	34,200
Charlestown Oaks	0	METER STATION ONLY			40,865		NA	0		
Kimberton Meadows	2	18,000	50	72,000	14,575	36,209	2.48	0	14,575	36,209

* For smaller pumping stations with limited flow recording data, Max. Day was calculated using average ratio of 4 regional stations (Pickering, White Horse, Pothouse, French Creek. Max. Day/Avg. Day= 3.69

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the VFSA Member Municipalities PADEP Chapter 94 Spreadsheet hydraulic and organic historical data and projections, the VFSA member municipalities are projected to slightly exceed their hyrdraulic capacity allocation for 2022 through 2025. However, a hydraulic overload of the wastewater treatment plant is not projected for these years since the plant is only currently at 58% of its capacity and the other partner municipalities are well below their projected hydraulic capacity allocations. This situation also occurred in 2018 and 2019 and is allowed under the Wastewater Treatment Plant Rental Pool Agreement where unused allocated capacity is automatically rented to the municipalities in need. There are no projected organic overload conditions through 2025.

There are no projected hydraulic overloads at the Pumping Stations for the next 2 years or the Wastewater Treatment Plant.

10. SEWAGE SLUDGE MANAGEMENT INVENTORY – NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, these meters are calibrated on a quarterly basis). Please see Attachment No. 2 of Section 1 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2020 calibration reports. Meter calibration reports are available upon request.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

APPENDIX A

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2020

Facility Name: VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES

Permit No.: PA0043974

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 2.128 MGD
Upgrade Planned in Next 5 Years? NO **Year:**
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 4,833 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO **Year:**
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2016	2017	2018	2019	2020
January	1.517	1.38439	1.250	2.457	1.638
February	2.473	1.24812	2.226	2.242	1.860
March	1.567	1.42886	2.363	2.649	1.854
April	1.311	1.8689	1.729	1.757	2.150
May	1.616	1.46658	2.117	1.959	1.802
June	1.204	1.38323	2.276	1.696	1.387
July	1.081	1.23158	1.905	1.526	1.446
August	1.049	1.25565	2.262	1.265	1.641
September	1.065	1.16308	2.514	1.175	1.235
October	1.026	1.14594	1.761	1.245	1.285
November	1.043	1.20121	2.706	1.363	1.528
December	1.246	1.16872	2.393	1.740	2.225
Annual Avg	1.35	1.328855177	2.125306121	1.756055787	1.670894487
Max 3-Mo Avg	1.852	1.588112075	2.327174079	2.518788247	1.954486961
Max : Avg Ratio	1.37	1.20	1.09	1.43	1.17
Existing EDUs	6,780.0	6,959.0	6,997.0	7,306.0	7,521.0
Flow/EDU (GPD)	199.1	191.0	303.7	240.4	222.2
Flow/Capita (GPD)	56.9	54.6	86.8	68.7	63.5
Exist. Overload?	NO	NO	NO	YES	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2016	2017	2018	2019	2020
January	2,530	2,309	2,085	4,098	2,732
February	4,125	2,082	3,712	3,740	3,102
March	2,614	2,383	3,942	4,418	3,092
April	2,187	3,117	2,885	2,930	3,586
May	2,696	2,446	3,532	3,267	3,006
June	2,009	2,307	3,797	2,828	2,313
July	1,803	2,054	3,177	2,545	2,413
August	1,749	2,094	3,774	2,111	2,737
September	1,776	1,940	4,194	1,959	2,060
October	1,712	1,911	2,938	2,076	2,143
November	1,740	2,004	4,514	2,274	2,549
December	2,078	1,949	3,992	2,902	3,712
Annual Avg	2,252	2,217	3,545	2,929	2,787
Max Mo Avg	4,125	3,117	4,514	4,418	3,712
Max : Avg Ratio	1.83	1.41	1.27	1.51	1.33
Existing EDUs	6,780	6,959	6,997	7,306	7,521
Load/EDU	0.332	0.319	0.507	0.401	0.371
Load/Capita	0.095	0.091	0.145	0.115	0.106
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2021	2022	2023	2024	2025
New EDUs	141.0	158.6	45.0	25.0	18.0
New EDU Flow	0.0326	0.0367	0.0104	0.0058	0.0042
Proj. Annual Avg	1.67882	1.71552	1.72592	1.73172	1.73592
Proj. Max 3-Mo Avg	2.1039	2.14989	2.16293	2.1702	2.17546
Proj. Overload?	NO	YES	YES	YES	YES

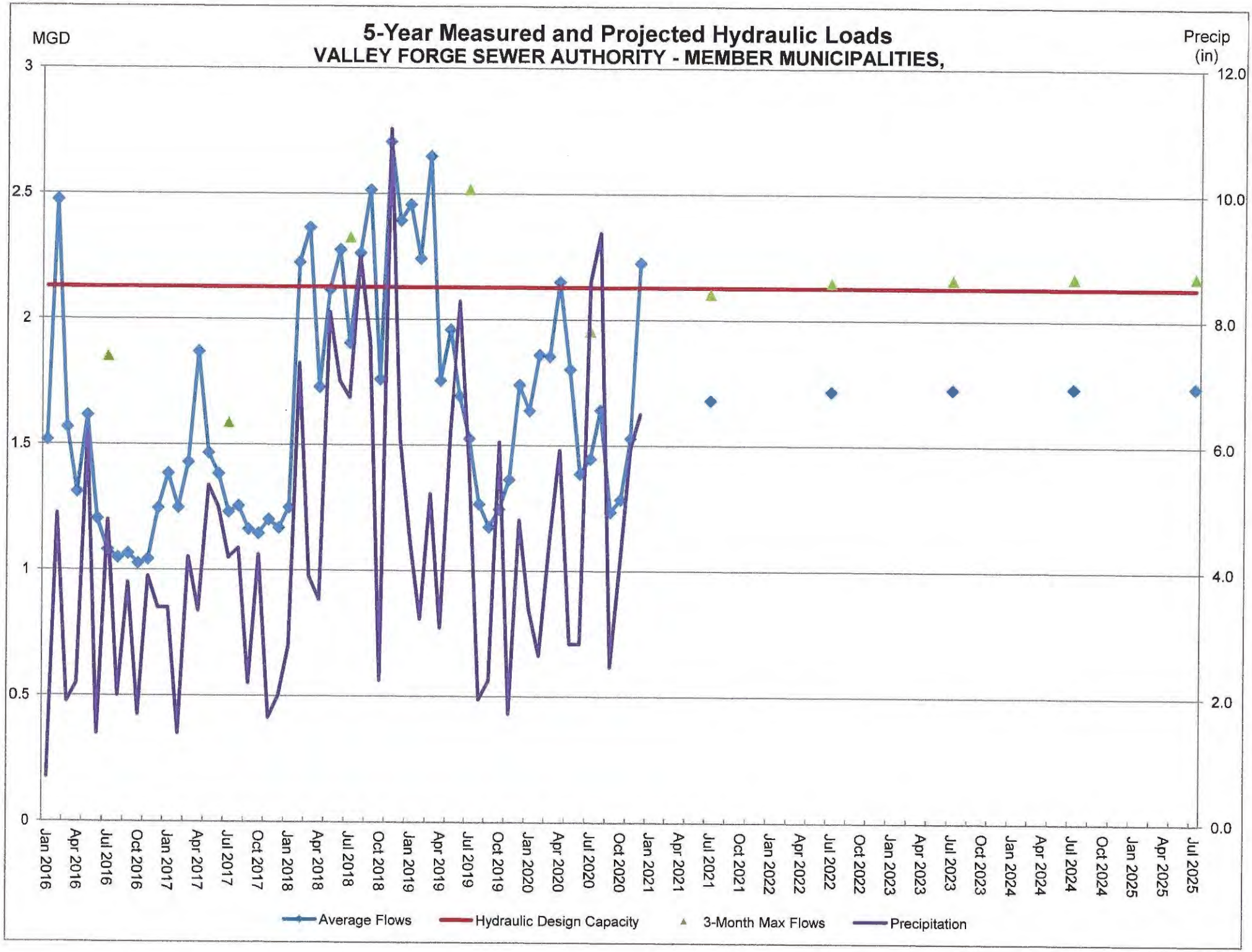
Projected BOD5 Loads for Next Five Years (lbs/day)

	2021	2022	2023	2024	2025
New EDUs	141	158.6	45	25	18
New EDU Load	54.390	61.179	17.359	9.644	6.943
Proj. Annual Avg	2,800	2,861	2,879	2,888	2,895
Proj. Max Avg	4,117	4,207	4,233	4,247	4,257
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2016	2017	2018	2019	2020
January	0.7	3.4	2.8	4.5	3.4
February	4.9	1.4	7.3	3.2	2.7
March	1.9	4.21	3.9	5.2	4.5
April	2.2	3.35	3.5	3.1	5.9
May	6.2	5.35	8.1	6.2	2.8
June	1.4	5.0	7.0	8.3	2.8
July	4.8	4.2	6.8	5.7	8.6
August	2.0	4.35	9.0	2.0	9.4
September	3.8	2.2	7.7	2.3	2.5
October	1.7	4.25	2.3	6.1	4.2
November	3.9	1.65	11.0	1.7	6.0
December	3.4	2.0	6.1	4.8	6.5


5-Year Measured and Projected Hydraulic Loads
VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES,
MGD
Precip (in)
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2
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0
12.0
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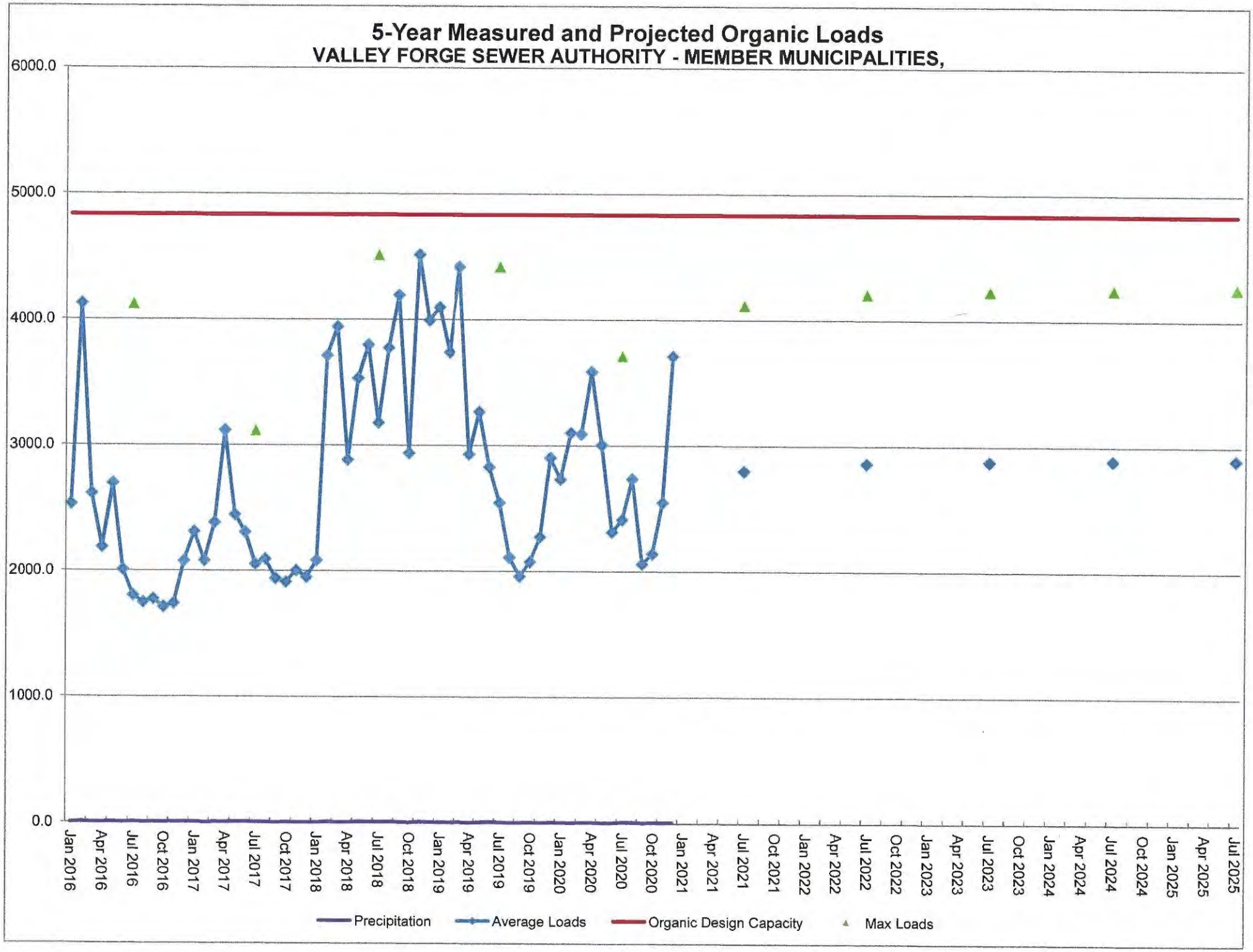
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation


5-Year Measured and Projected Organic Loads
VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES,
6000.0
5000.0
4000.0
3000.0
2000.0
1000.0
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Jan 2025
Apr 2025
Jul 2025
Precipitation
Average Loads
Organic Design Capacity
Max Loads

Updated: 3/18/2021

TABLE 1
PROJECTED EDU GROWTH WITHIN THE MEMBER MUNICIPALITIES

The estimated EDUs for the years 2020 through 2024 and beyond are as follows:

Development	Status	Twp.	Approved EDUs Total	Remaining EDUs - Total	2021	2022	2023	2004	2025	Beyond	Type of Ext.	Drainage Basin
Campbell (26-2-169)	P	EP	9	9	0	0	2	7	0	0	R	FC-2009
Celluci	P	CH	16	16	0	0	0	0	0	16	R	LT-3010
19 Oakwood Lane (27-7-10.13A)	A	S	1	1	0	0	0	0	0	0	R	VC
Connell Property (26-2-160,161)	P	EP	2	2	0	0	0	2	0	0	R	FC-2009
Commons at Great Valley	E	CH	73	10	5	5	0	0	0	0	C	LT-3010
Croft @ Rt 113 & 7 Stars	N	EP	2	2	0	2	0	0	0	0	R	FC-2009
Cutler (Kimberton Glen)	A	EP	332	135	50	50	20	10	5	0	R	FC-2009
Deer Run Lane	E	EP	9	3	0	0	0	0	0	3	R	FC-2009
Devault Meats	E	CH	134	134	0	0	0	0	0	134	I	LT-3010
Emmanuel/Dodie	N	EP	13	13	0	0	0	0	0	13	R	FC-2009
Ferry Lane (Masters)	P	S	4	4	2	2	0	0	0	0	R	PER-1009
Fillipo Tract (Devault Village)	A	CH	78	78	28	50	0	0	0	0	R	LT-3010
French Creek Business Park	E	S	25	10	10	0	0	0	0	0	C	FC-2009
Gappa @ Rapps Dam Rd (26-3-106)	P	EP	3	3	0	0	2	0	0	1	R	FC-2009
GPT Properties (566 & 574 Schuylkill Rd	N	EP	3	3	3	0	0	0	0	0	R	FC-2009
Heritage (Coccia)	P	EP	22	22	0	0	0	0	0	22	R	FC-2009
Holy Ascension Church	P	CH	6.6	6.6	0	6.6	0	0	0	0	R/C	LT-3010
Jugan Property (26-2-170.2,170.3,170.4	P	EP	17	17	0	0	0	0	0	17	R	FC-2009
Kaiserman/Condign	N	EP	15	15	0	10	5	0	0	0	R	FC-2009
Kimberton Square	E	EP	10	10	0	3	2	5	0	0	R	FC-2009
Late Spring Development	E	CH	10	8	0	0	0	0	0	8	R	LT-3010
Laurabrooke	P	CH	20	20	0	0	0	0	0	20	R	LT-3010
Lee/Brook/Pheasant Run	N	EP	52	52	0	0	0	0	0	52	R	FC-2009
505 Pawlings Road	A	S	1	1	0	0	0	0	0	0	R	PER-1009
Meadow Lane	N	EP	12	12	0	0	0	0	12	0	R	FC-2009
Meadowbrook Farm (PASD)	P	S	3	3	0	0	0	0	0	0	R/C	WH-1004
Mill Lane	P	S	3	2	1	0	0	0	0	1	R	WH-1004
Miller Pond Subdivision	A	EP	2	1	1	0	0	0	0	0	R	FC-2009
Miscellaneous**			51	21	1	1	1	1	1	16	R/C	
Morehall @ VF	E	S	148	1	0	0	0	0	0	1	R	PK-1003
Phoenixville Area School District	P	EP	15	15	0	0	0	0	0	15	R/C	FC-2009
Phoenixville Crossing	P	EP	79	79	0	0	0	0	0	79	R	FC-2009
Piazza 26-2-194.3,194.4	P	EP	15	15	5	10	0	0	0	0	I	FC-2009
Pickering Crossing	P	CH	78	9	4	4	1	0	0	0	R	LT-3010
Pleasant Valley Acres	N	EP	27	27	0	0	0	0	0	27	R	FC-2009
Pothouse Road (26-3-147)	P	EP	10	10	0	2	8	0	0	0	R	FC-2009
Reeves Property	P	S	93	93	0	0	0	0	0	93	R	PK-1003
Route 23 Commercial	E	S	6	2	0	0	0	0	0	2	C	PK-1003
Shick (26-2-96)	P	EP	3	1	0	1	0	0	0	0	R	FC-2009
Snyder Avenue	N	EP	10	10	0	0	0	0	0	10	R	FC-2009
Spring Oak	P	CH	184	23	15	8	0	0	0	0	R	LT-3010
Thoroughbred Drive	P	EP	4	4	0	0	0	0	0	4	R	FC-2009
Valley Forge Greene Townhomes	P	S	32	24	16	4	4	0	0	0	R	PER-1009
Warner Lane	P	CH	16.9	16.9	0	0	0	0	0	16.9	R/C	LT-3010
Zone Dist I/O	P	CH	175	175	0	0	0	0	0	175	R/C	LT-3010
Zone Dist B-1, FR, LI/B, RC	P	CH	228.5	228.5	0	0	0	0	0	228.5	R/C	LT-3010
		Totals:	**1,347.0**	**141.0**	**158.6**	**45.0**	**25.0**	**18.0**	**954.4**			

TYPE
C- COMMERCIAL
I - INDUSTRIAL
R - RESIDENTIAL
R/C - RESIDENTIAL/COMMERCIAL

STATUS
E = EXISTING (INCLUDED ON COMP MAP)
A = APPROVED BY VFSA (ON COMP MAP)
P = IN NEEDS ANALYSIS - NO FORMAL APPLICATION TO VFSA - REQUIRES PUBLIC SEWER BUT ARE IN PRELIMINARY PLANNING STAGE) SHOWN WITH BUBBLE ON COMPREHENSIVE MAP
N = NEW, NAMED BY TOWNSHIP

MUNICIPALITIES
EP - EAST PIKELAND TOWNSH
CH - CHARLESTOWN TOWNSH
S - SCHUYLKILL TOWNSHIP
WV - WEST VINCENT
EP&WV - EAST PIKELAND & WE

DRAINAGE BASIN
CC - COUNTRY CLUB
FC -FRENCH CREEK
KD - KIMBLE DRIVE
LT - LEE TIRE BLVD
PER - PERKIOMEN
PH - POT HOUSE
PK - PICKERING
RT-401 = ROUTE 401
SYDLEY RD - TO E. WHITELAND
VC - VALLEY CREEK
WH - WHITEHORSE

5 YEAR PROJECTION	
2021	141.0
2022	158.6
2023	45.0
2024	25.0
2025	18.0
Beyond	954.4
Total	1,342

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

SANITARY SEWER OVERFLOWS (SSOs)

APPENDIX B

3800-FM-BCW0440 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Valley Forge Sewer Authority Month: January Year: 2020

Municipality: Schuylkill Township County: Chester Permit No.: PA 0043974

☐ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

☒ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified
1/25/20	Sanitary Sewage	630 West Pothouse Rd 2 manholes Adjacent to Pothouse Rd PS	<35000 (EST)	0.25 (EST)	Caines Creek	None observed.	See attached detail of event.	1/25/20

☐ **Other Permit Violations***

- ☐ Sample collection less frequent than required — Explain
- ☐ Sample type not in compliance with permit — Explain
- ☐ Violation of permit schedule — Explain
- ☐ Other — Explain
- ☐ Other — Explain

***If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Martin F. Goldberg/Lloyd R. Knauer Signature: Martin F Goldberg Lloyd R. Knauer

Title: Operations Manager/O & M Supervisor Date: 1/31/20 1/31/2020

Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
NPDES # PA 0043974

Pothouse Road Sanitary Sewer Overflow (SSO) Event

1/25/20

At about 11am on Saturday 25 January 2020, during a heavy rain event, the Authority experienced a sewer system overflow (SSO) of less than 35,000 gallons to the Caines Creek near the Pothouse Pumping Station at 630 West Pothouse Road in Schuylkill Township PA. The pump station is designed with three pumps, with 2 electrical pumps and a third diesel powered self priming emergency pump. Two electric pumps may pump the design flow from the wet well. If there is a failure of an electric pump, the self priming emergency pump should engage to pump the design flow from the wet well.

On 25 January the relatively high flows from a storm would have resulted in the need to operate 2 electric pumps simultaneously. However when this occurred, the lag pump failed to start. Once the emergency pump engaged, it self-primed, and pumped down the pump station wet well. But this occurred too late to prevent an SSO. Had either the lag electric pump or the diesel powered emergency pump activated sooner, the SSO could have been avoided. It is unclear why the lag electric pump didn't start. In order to prevent a future SSO, the Authority is performing the following activities:

- Review the settings and controls on all of our pumping stations. Consider activating the emergency pump at a lower wet well level.
- Consider utilizing a device that was part of the original emergency pump design which maintains pump prime by keeping the suction pipe full at all times. Consider adding equipment to prevent freezing in the suction line which will allow for maintaining pump prime in winter weather. If successful, this will shorten the time necessary for the engaged emergency pump to pump down the wet well.
- Consider adding a third electric pump at the Pothouse pump station.

Per the requirements of the treatment plant's NPDES permit, PADEP and three potable water plants located on the Schuylkill River downstream from the entry point of the sewer overflow were notified.

3800-FM-BCW0440 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Valley Forge Sewer Authority Month: August Year: 2020

Municipality: Schuylkill Township County: Chester Permit No.: PA 0043974

☒ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken
8/5/20	Fecal coliform	1000	No./ 100 mL	Instantaneous Maximum	>2420	col/ 100 mL	Power Outage of Approximately 23 hours - See Attachment	

☒ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified
8/4/20	Sanitary Sewage	Manhole Adacent to Pothouse Pump Station	152,019 (est)	6.0 (est.)	Caines Creek	None observed	Heavy Rain Event - Tropical Storm Isiasis	8/4/20
8/4-5/20	Sanitary Sewage	Manholes Adjacent to VFSA Admin Building	77,640 (est.)	14.5 (est.)	Tributary to Schuylkill River	None observed	Heavy Rain Event - Tropical Storm Isiasis	8/4/20

☐ **Other Permit Violations***

- ☐ Sample collection less frequent than required — Explain
- ☐ Sample type not in compliance with permit — Explain
- ☐ Violation of permit schedule — Explain
- ☐ Other — Explain
- ☐ Other — Explain

***If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Martin F. Goldberg Signature: Martin F Goldberg

Title: Operations Manager Date: 8/14/20

Attachment 1
VFSA Power Outage - Chronology of Major Events
August 4-6 2020

Date	Time	Activity at the Plant and Collection System
4 August 2020	1000	SSO estimated to have started at manholes on lane adjacent to VFSA Admin building.
4 August 2020	1200	SSO estimated to have started at manhole on Pothouse Rd adjacent to Pothouse Pump Station.
4 August 2020	1305	Power out on both sides of the treatment plant.
4 August 2020	1310	VFSA Contacts BSI and requests portable generator for Plant UV.
4 August 2020	1515	Temporary generator installed at Plant UV System
4 August 2020	1800	SSO on Pothouse Rd ends. Length of SSO estimated to be about 6.0 hours and 152,019 gallons.
5 August 2020	0030	SSO at manholes on lane adjacent to VFSA Admin building ends. Length of SSO estimated to be about 14.5 hours and 77,640 gallons.
5 August 2020	1200	Power restored to one supply source of the treatment plant. UV still on generator power.
6 August 2020	1250	Power restored to both plant sources. UV building on plant power.

Estimate of SSO from Pothouse PS 4 August 2020					
Data from Flow Report Mission System					
Overflow Event Hours 8/4/20	**French Creek Total Gallons Pumped**	**Pothouse Total Gallons Pumped**	***Whitehorse Total Gallons Pumped**	**Pothouse Required Pumped Gallons at 91% of Whitehorse**	**Estimated SSO for Pothouse Station in Gallons**
12:00	185,630	218,816	268,451		
13:00	189,282	222,429	281,118		
14:00	190,662	225,057	286,690		
15:00	190,672	225,057	283,510		
16:00	190,663	225,812	282,796		
17:00	190,409	224,111	286,540		
Sum Gallons Pumped (6 hours total)	1,137,318	1,341,282	1,689,105	1,537,086	***152,019***
Percentage of Whitehorse	67	79	100		(Equals Required Minus Actual Pumped)
July 2020 Total Flows Pumped (gallons)	18,910,760	22,326,394	24,475,573		
Percentage of Whitehorse Rate	77	**91**	100		
*** There was no SSO observed at the downstream Whitehorse Pump Station.**					

Estimate of SSO from VFSA Admin Lane 4-5 August 2020				
Manhole Closest to Perkiomen PS -Data from Visual Observations				
Overflow Event Hours 8/4/20-8/5/20	SSO Estimated Depth (Inches)	Estimated SSO Flow Based on Open Manhole (gpm)	Estimated SSO Flow Based on Open Manhole (MGD)	Estimated SSO Flow Total (gallons)
8/4/2020 10:00	1/8	28	0.04	1,680
8/4/2020 11:00	1/4	62	0.09	3,720
8/4/2020 12:00	1/2	160	0.23	9,600
8/4/2020 13:00	1/2	160	0.23	9,600
8/4/2020 14:00	1/2	160	0.23	9,600
8/4/2020 15:00	1/2	160	0.23	9,600
8/4/2020 16:00	1/2	160	0.23	9,600
8/4/2020 17:00	1/4	62	0.09	3,720
8/4/2020 18:00	1/4	62	0.09	3,720
8/4/2020 19:00	1/4	62	0.09	3,720
8/4/2020 20:00	1/4	62	0.09	3,720
8/4/2020 21:00	1/8	28	0.04	1,680
8/4/2020 22:00	1/8	28	0.04	1,680
8/4/2020 23:00	1/8	28	0.04	1,680
8/5/2020 0:00	1/8	28	0.04	1,680
8/5/2020 0:30	1/8	28	0.04	1,680
Sum Gallons	------	------	------	*76,680*

Estimate of SSO from VFSA Admin Lane 4-5 August 2020				
Manhole Closest to RR Tracks - Data from Visual Observations				
Overflow Event Hours 8/4/20-8/5/20	SSO Estimated Depth (Inches)	Estimated SSO Flow Based on Covered Manhole (gpm)	Estimated SSO Flow Based on Covered Manhole (MGD)	Estimated SSO Flow Total (gallons)
8/4/2020 10:00	1/4	1	0.001	60
8/4/2020 11:00	1/4	1	0.001	60
8/4/2020 12:00	1/4	1	0.001	60
8/4/2020 13:00	1/4	1	0.001	60
8/4/2020 14:00	1/4	1	0.001	60
8/4/2020 15:00	1/4	1	0.001	60
8/4/2020 16:00	1/4	1	0.001	60
8/4/2020 17:00	1/4	1	0.001	60
8/4/2020 18:00	1/4	1	0.001	60
8/4/2020 19:00	1/4	1	0.001	60
8/4/2020 20:00	1/4	1	0.001	60
8/4/2020 21:00	1/4	1	0.001	60
8/4/2020 22:00	1/4	1	0.001	60
8/4/2020 23:00	1/4	1	0.001	60
8/5/2020 0:00	1/4	1	0.001	60
8/5/2020 0:30	1/4	1	0.001	60
Sum Gallons	------	------	------	*960*

TOTAL SSO FLOW=	77,640

ESTIMATED SSO FLOW OUT OF MH WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

The formula used to develop Table 1 measures the maximum height of the water coming out of the maintenance manhole above the rim. The formula was taken from Hydraulics and its Application by A.H. Gibson (Constable & Co. Limited).

Partially Covered Manhole

Sometimes an SSO will occur that only lifts one side of the manhole cover. This is especially true of manholes where the cover is on an incline with the cover lifting on the downward side of the manhole. To estimate the volume of an SSO under these conditions, calculate the area (in square feet) from where the wastewater is escaping and the velocity (in feet per second) that the wastewater is normally traveling in the sewer at half the pipe depth. The velocity is estimated from visual observation with 2 feet/second or less being a small velocity, 4 to 5 feet/second being a medium velocity, and 7 feet/second or higher being a large velocity. Velocities in the sewer above 7 feet/second may be strong enough to blow the manhole cover off. Higher velocities also tend to raise the manhole lid higher. Next, multiply by the duration

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.67	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

VFSA MAJOR PUMP STATION FLOWS
VERSUS RAINFALL – SUMMARY AND GRAPHS

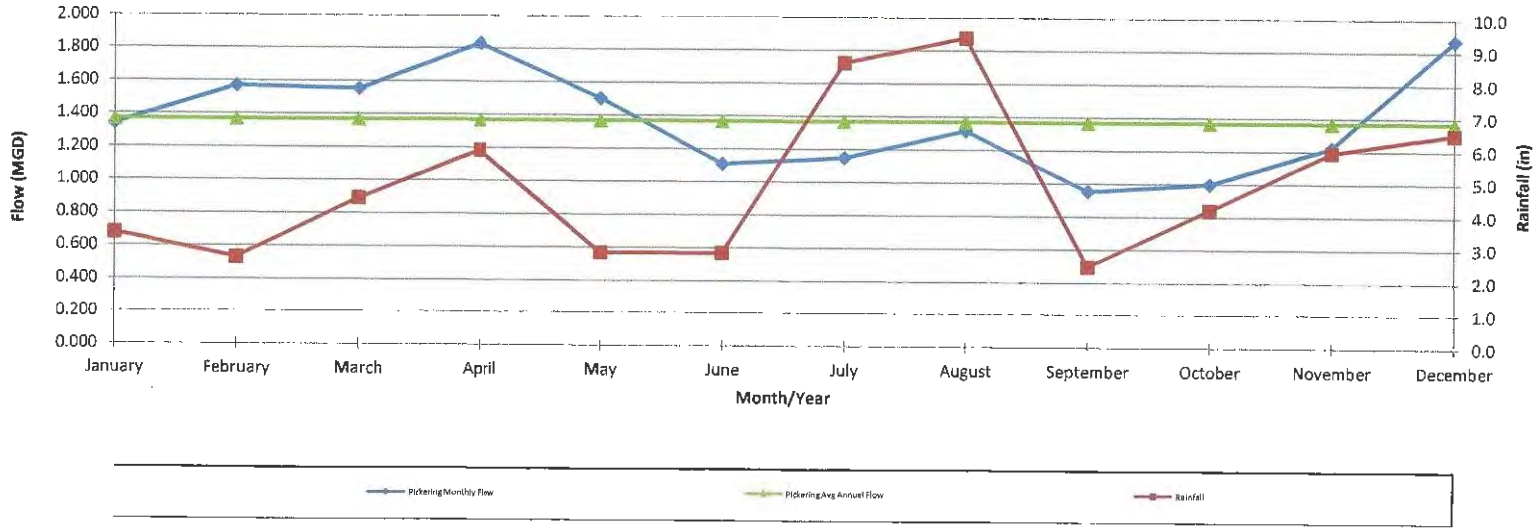
APPENDIX C

Pickering Pump Station
White Horse Pump Station
Pot House Pump Station
French Creek Pump Station

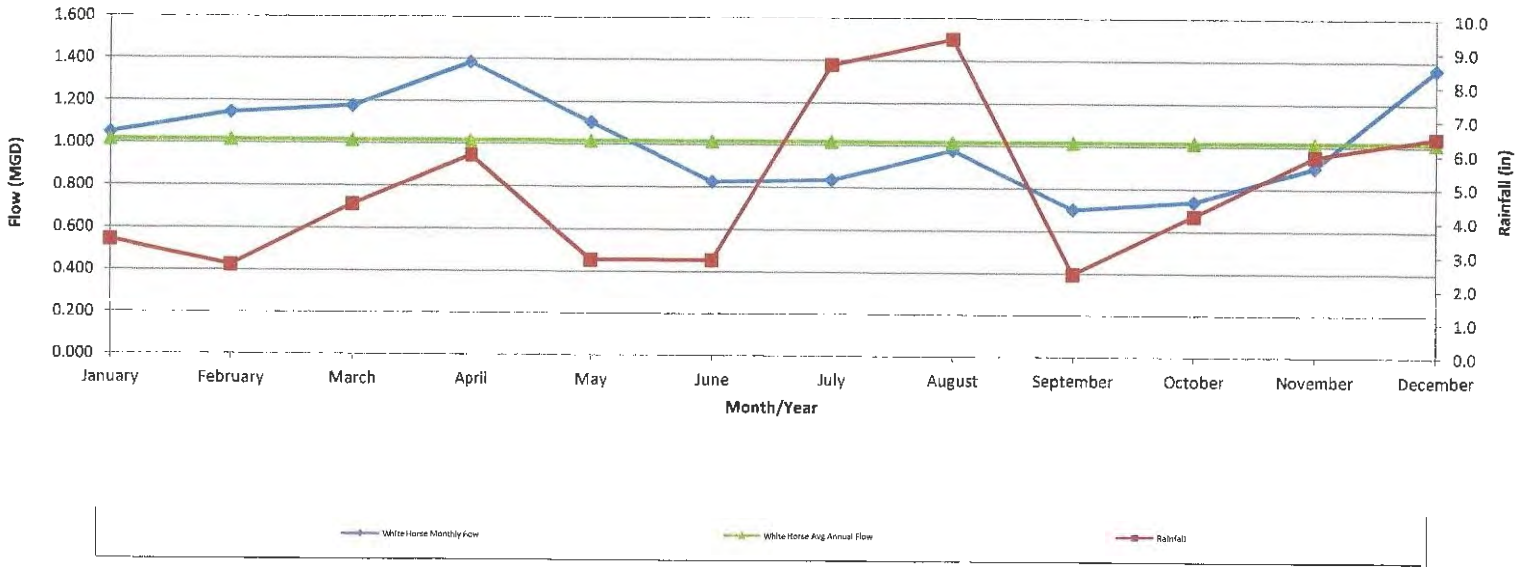
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY PUMP STATION FLOW

Year	Month	Monthly Flow at Major Pump Stations, MGD				
		Pickering	Whitehorse	Pot House	French Ck	Rainfall
2020	January	1.338	1.047	0.714	0.821	3.39
	February	1.568	1.143	0.969	0.811	2.65
	March	1.551	1.175	0.990	0.826	4.45
	April	1.830	1.383	1.150	0.960	5.92
	May	1.500	1.103	0.931	0.766	2.84
	June	1.108	0.824	0.724	0.597	2.84
	July	1.147	0.835	0.935	0.606	8.61
	August	1.315	0.978	0.823	0.701	9.38
	September	0.951	0.700	0.607	0.517	2.47
	October	0.997	0.738	0.640	0.553	4.19
	November	1.221	0.900	0.764	0.668	5.95
	December	1.869	1.363	1.121	0.951	6.50
Avg Annual Flow (MGD) =		**1.366**	**1.016**	**0.864**	**0.731**	

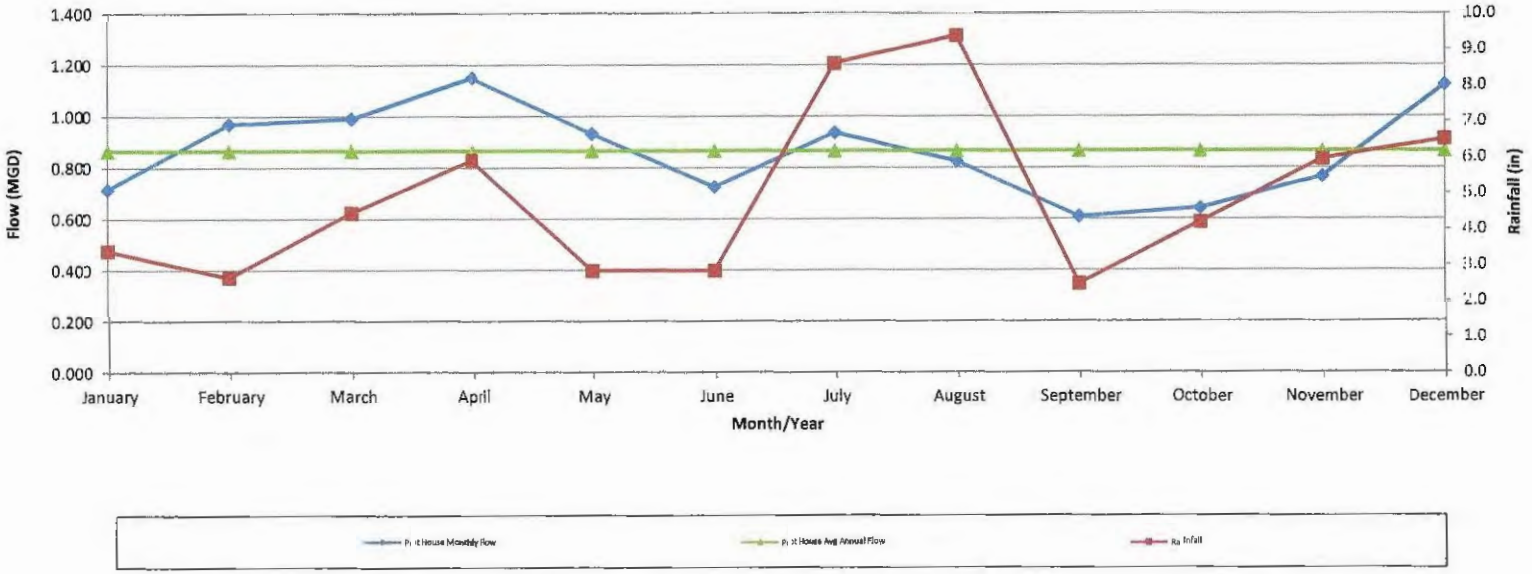
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM PICKERING PUMP STATION VERSUS RAINFALL



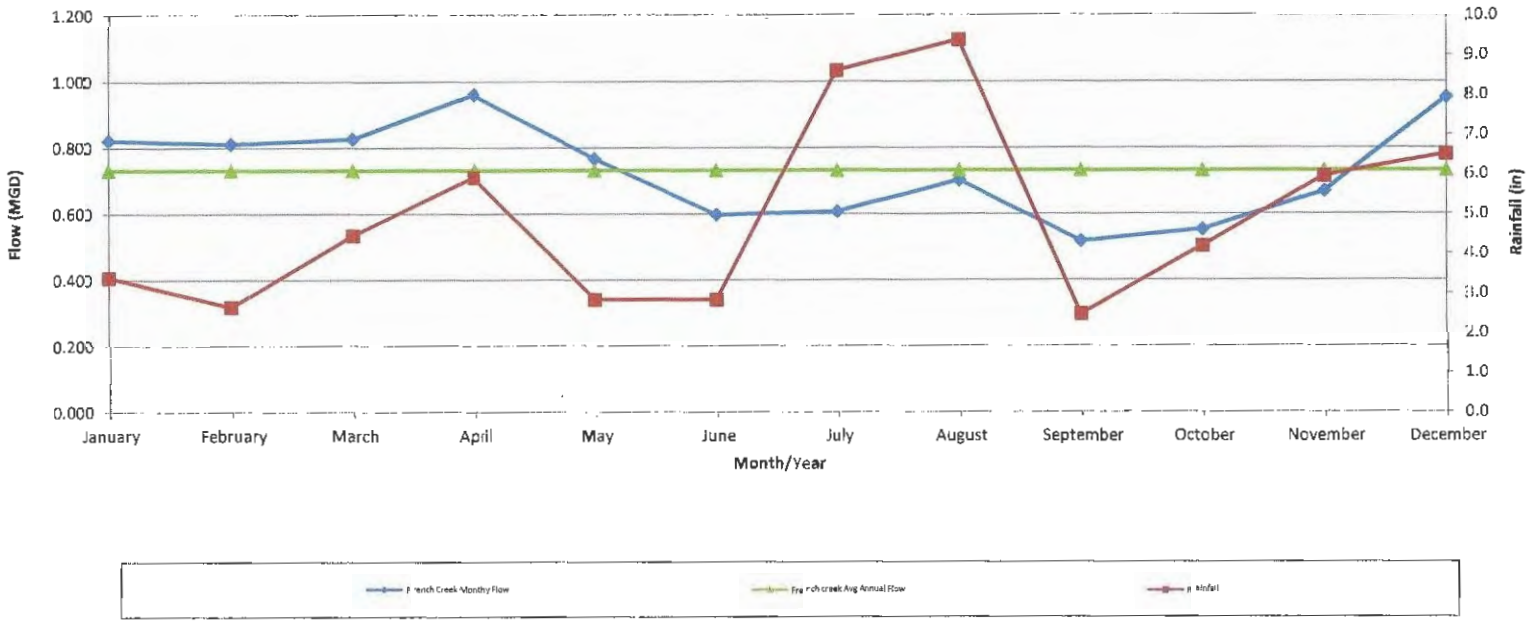
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM WHITE HORSE PUMP STATION VERSUS RAINFALL



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM POT HOUSE PUMP STATION VERSUS RAINFALL



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM FRENCH CREEK PUMP STATION VERSUS RAINFALL



2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

1 INCH PLUS RAINFALL VERSUS FLOW AT METERED PUMP STATIONS – SUMMARY AND GRAPHS

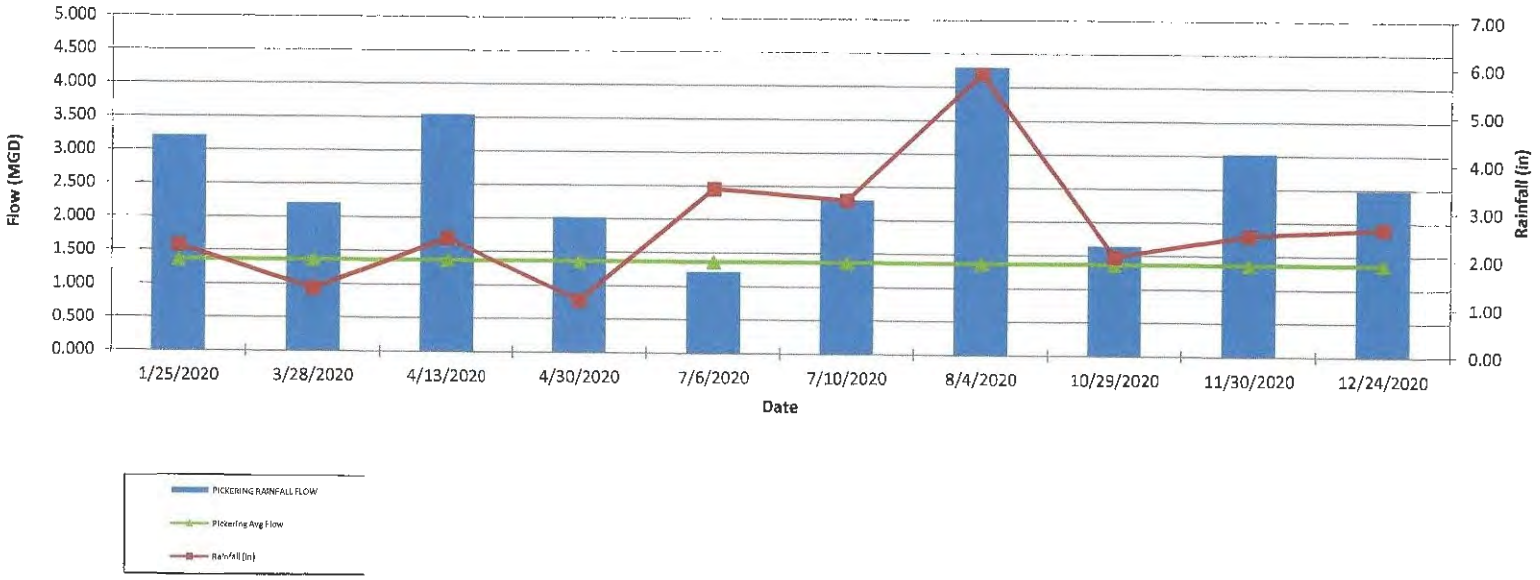
APPENDIX D

Pickering Pump Station
White Horse Pump Station
Pot House Pump Station
French Creek Pump Station
Charlestown Meadows Pump Station
Charlestown Pump Station
Kimberton Meadows Pump Station
Kimbel Drive Pump Station
Perkiomen Pump Station
Valley Creek Pump Station
Valley Forge Woods Pump Station

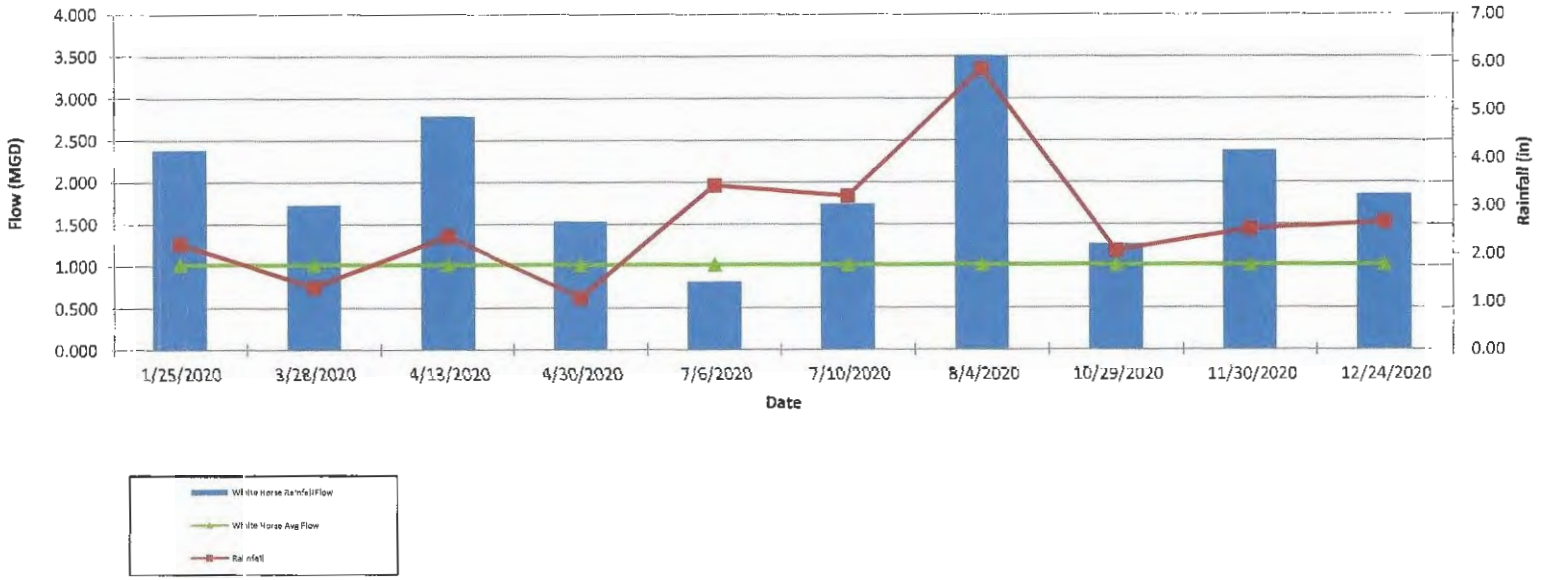
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW SUMMARY AT PUMP STATIONS

		Pickering PS Rainfall Flow		White Horse PS Rainfall Flow		Pot House PS Rainfall Flow		French Creek PS Rainfall Flow		Charlestown Meadows Rainfall Flow		Charlestown PS Rainfall Flow		Kimberton Meadows PS Rainfall Flow		Kimbel Drive PS Rainfall Flow		Perkiomen PS Rainfall Flow		Valley Creek PS Rainfall Flow		Valley Forge Woods PS Rainfall Flow	
Rain Date	Rainfall	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
1/25/2020	2.21	3.208	2.35	2.387	2.35	1.436	1.66	1.823	2.49	0.029	1.06	0.102	3.02	0.022	1.27	0.040	2.29	0.186	2.35	0.050	2.76	0.075	1.20
3/28/2020	1.31	2.205	1.61	1.729	1.70	1.413	1.64	1.185	1.62	0.032	1.16	0.062	1.84	0.022	1.29	0.029	1.65	0.117	1.47	0.027	1.49	0.077	1.23
4/13/2020	2.37	3.535	2.59	2.788	2.75	2.305	2.67	1.976	2.70	0.031	1.12	0.102	3.03	0.034	1.98	0.044	2.53	0.169	2.14	0.052	2.86	0.085	1.36
4/30/2020	1.09	2.016	1.48	1.534	1.51	1.251	1.45	1.050	1.44	0.029	1.04	0.055	1.64	0.020	1.17	0.024	1.38	0.102	1.28	0.024	1.33	0.075	1.20
7/6/2020	3.43	1.215	0.89	0.816	0.80	0.692	0.80	0.573	0.78	0.025	0.90	0.026	0.76	0.018	1.01	0.018	1.04	0.204	2.58	0.030	1.65	0.070	1.12
7/10/2020	3.21	2.295	1.68	1.740	1.71	1.444	1.67	1.238	1.69	0.036	1.31	0.060	1.77	0.021	1.18	0.037	2.12	0.201	2.54	0.053	2.93	0.082	1.30
8/4/2020	5.86	4.293	3.14	3.508	3.45	2.354	2.72	2.323	3.18	0.028	1.03	0.143	4.24	0.013	0.74	0.056	3.24	0.737	9.30	0.123	6.84	0.105	1.68
10/29/2020	2.07	1.643	1.20	1.263	1.24	1.069	1.24	0.935	1.28	0.031	1.12	0.033	0.97	0.020	1.14	0.029	1.68	0.098	1.24	0.033	1.80	0.069	1.10
11/30/2020	2.52	3.026	2.21	2.376	2.34	1.949	2.26	1.658	2.27	0.030	1.09	0.089	2.63	0.022	1.26	0.044	2.53	0.190	2.40	0.060	3.33	0.082	1.31
12/24/2020	2.66	2.479	1.81	1.854	1.83	1.499	1.74	1.250	1.71	0.031	1.14	0.066	1.96	0.022	1.26	0.034	1.99	0.200	2.52	0.039	2.15	0.090	1.44
Yearly Avg Flow (MGD) =		**1.366**		**1.016**		**0.864**		**0.731**		**0.027**		**0.034**		**0.017**		**0.017**		**0.079**		**0.018**		**0.063**	
High Peaking Factor =			**3.14**		**3.45**		**2.72**		**3.18**		**1.31**		**4.24**		**1.98**		**3.24**		**9.30**		**6.84**		**1.68**
Average Peaking Factor =			**1.90**		**1.97**		**1.78**		**1.92**		**1.10**		**2.19**		**1.23**		**2.05**		**2.78**		**2.71**		**1.29**

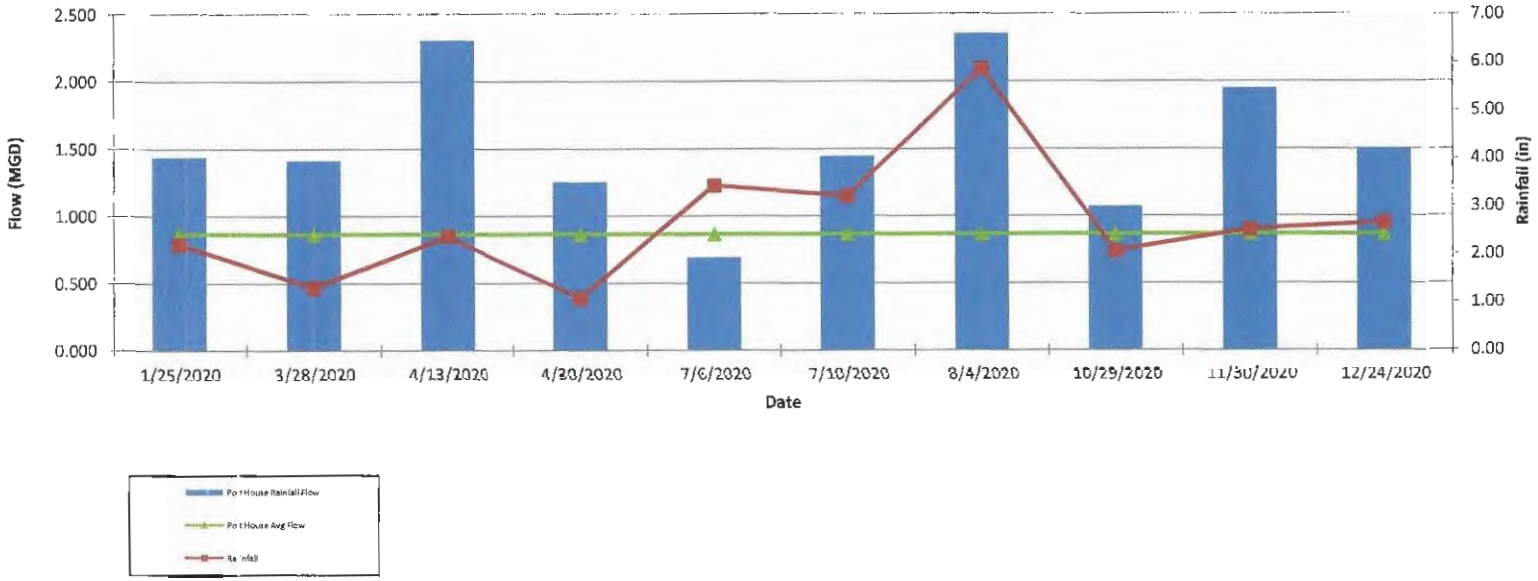
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR PICKERING PUMP STATION



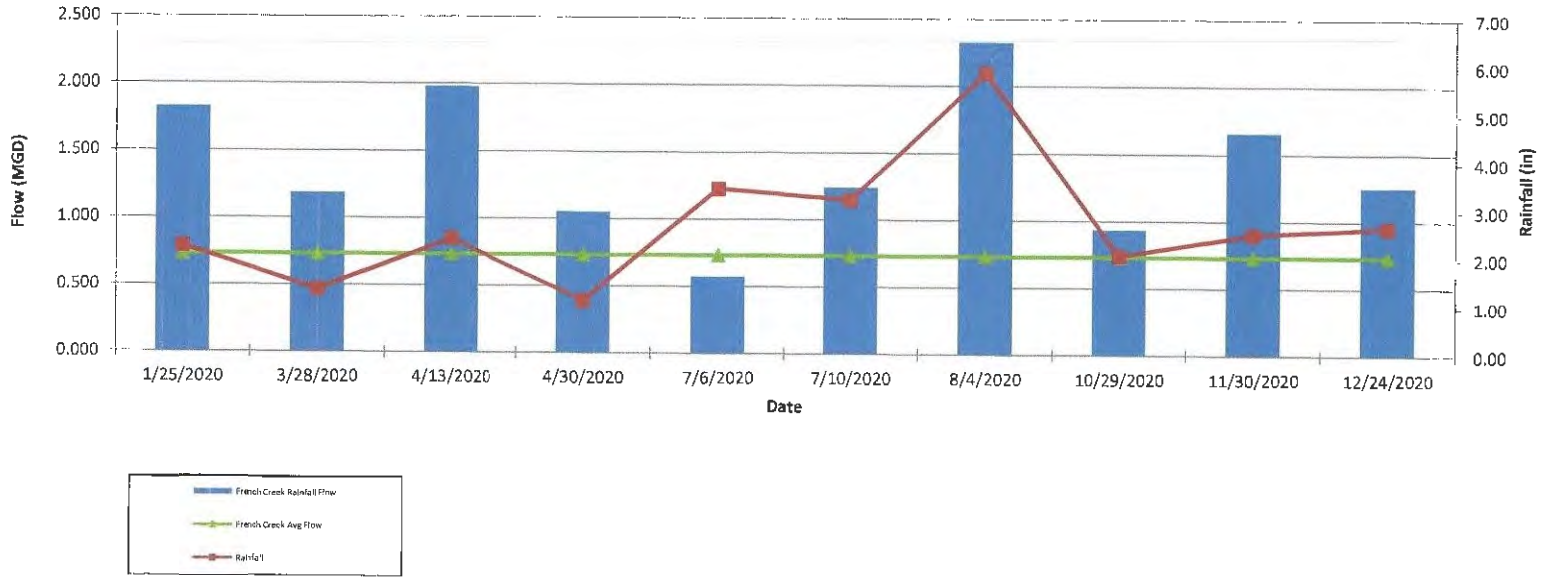
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR WHITE HORSE PUMP STATION



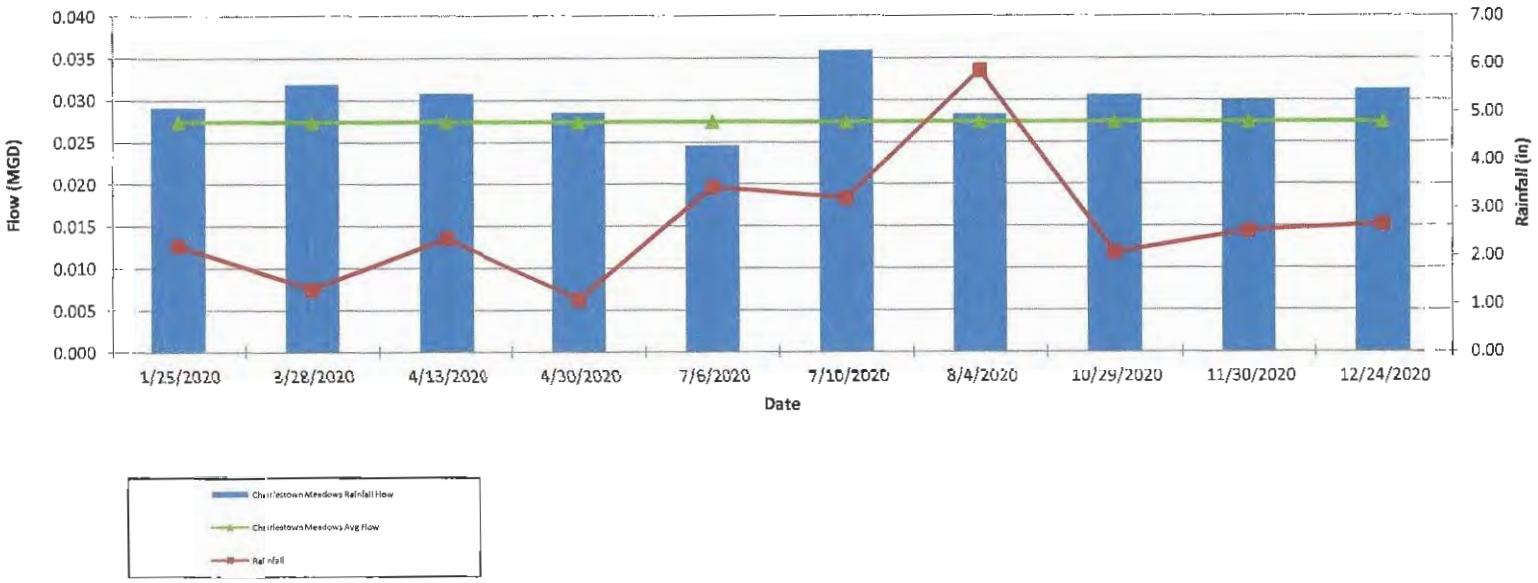
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR POT HOUSE PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR FRENCH CREEK PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR CHARLESTOWN MEADOWS PUMP STATION



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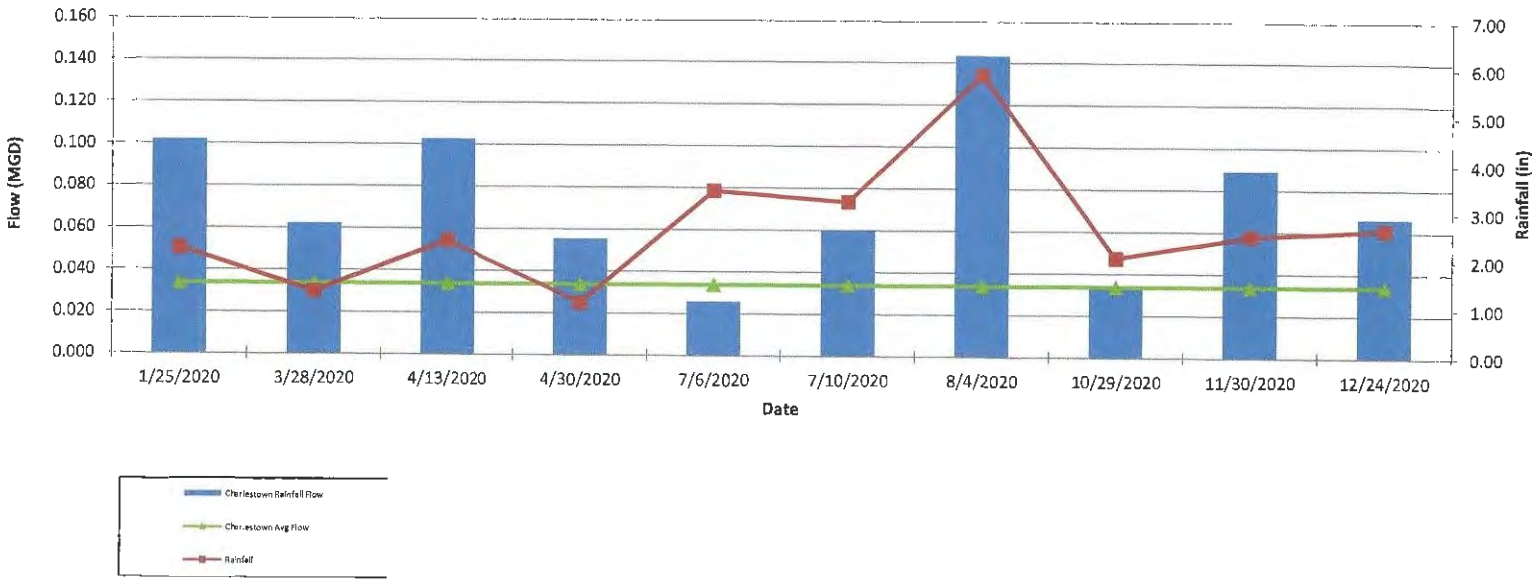
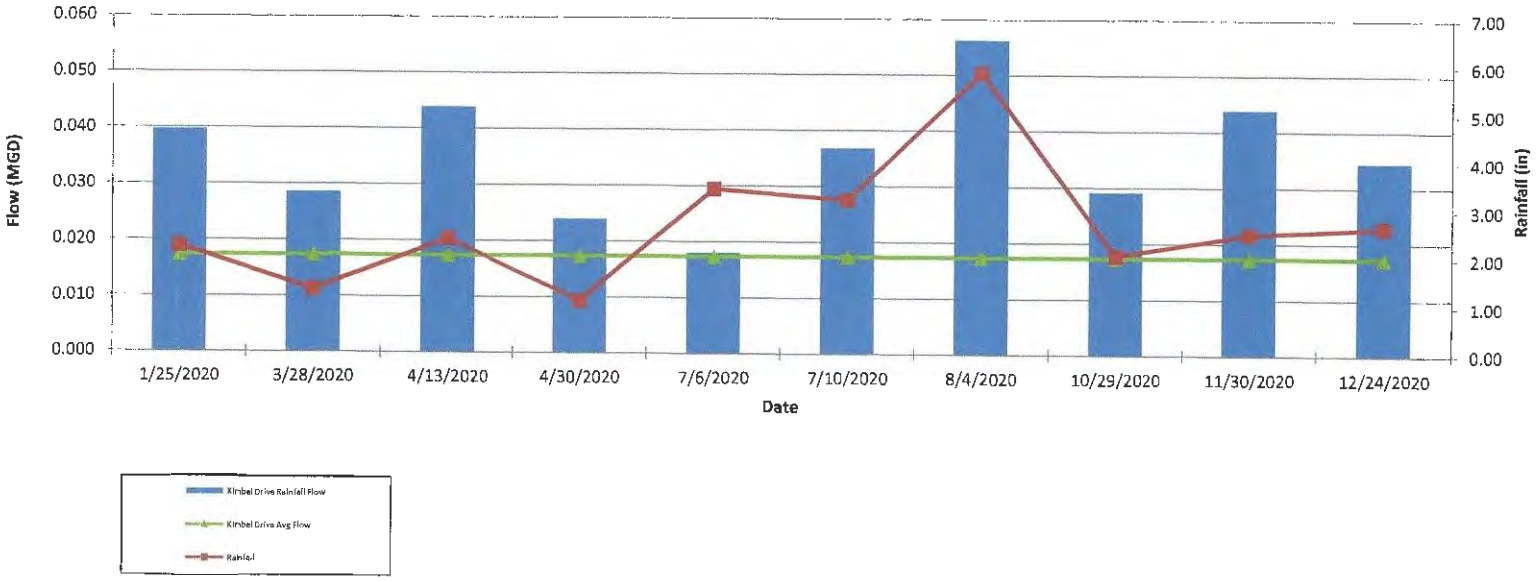
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR CHARLESTOWN PUMP STATION

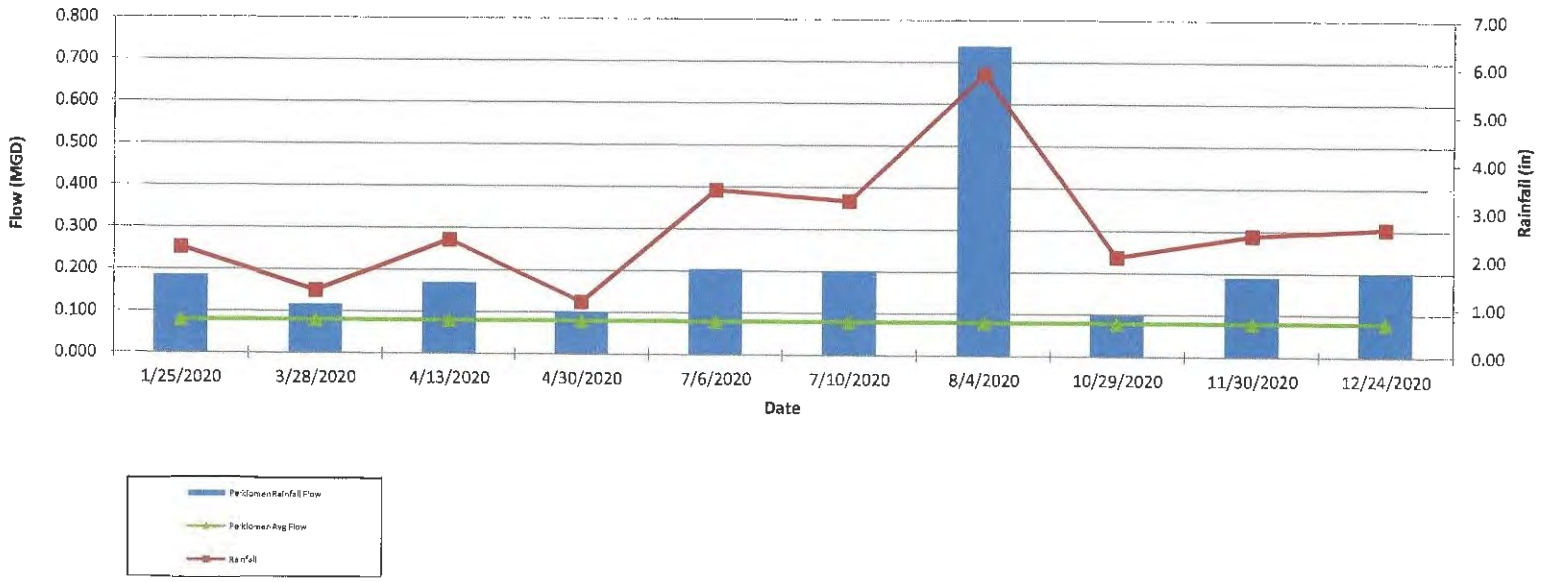


GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR KIMBERTON MEADOWS PUMP STATION

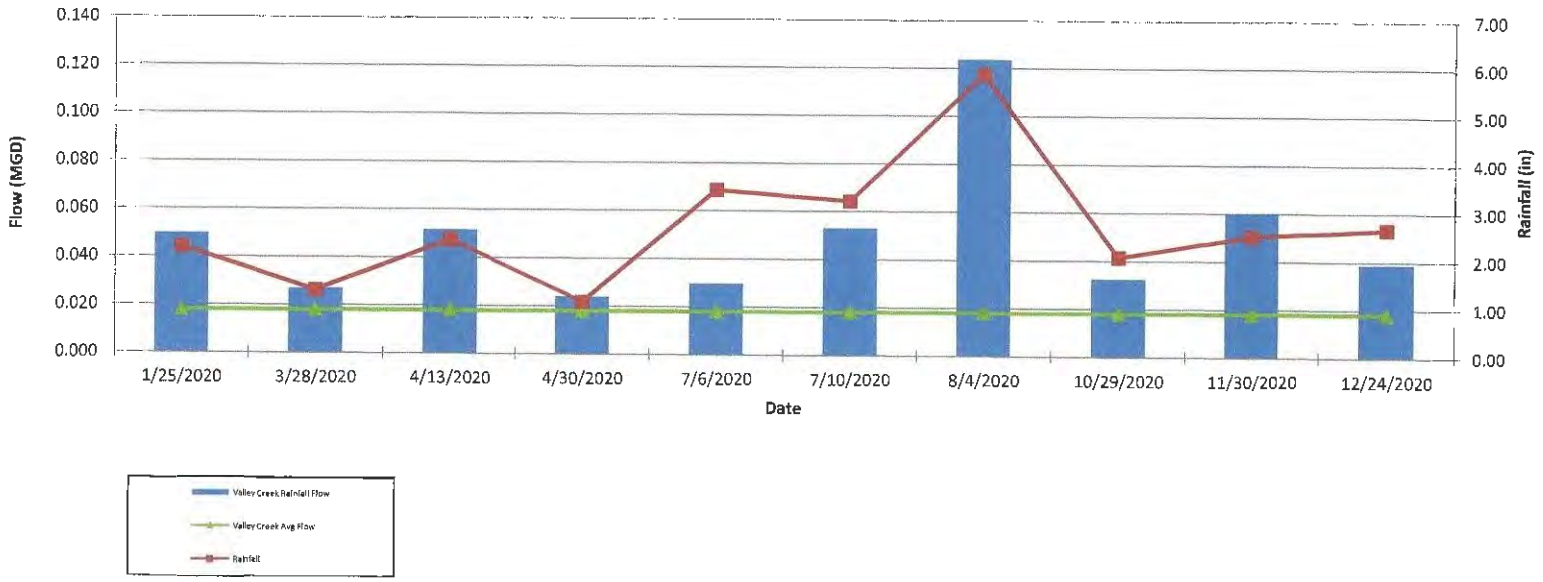
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR KIMBEL DRIVE PUMP STATION



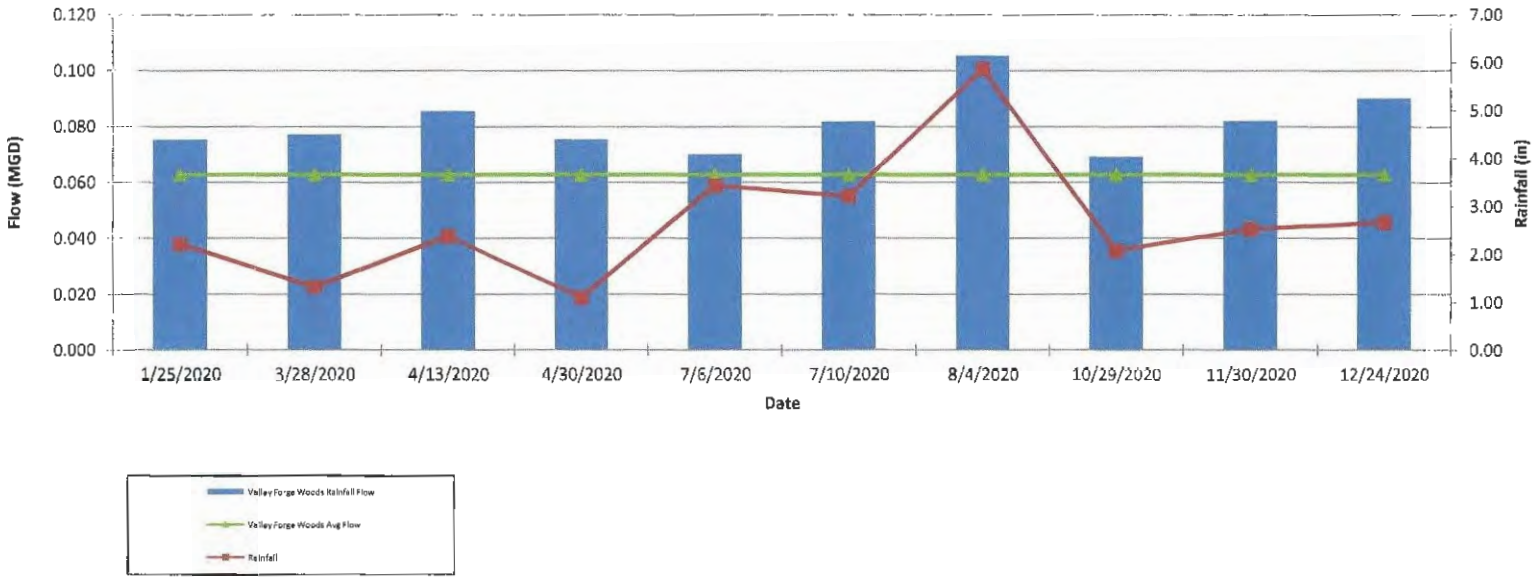
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR PERKIOMEN PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR VALLEY CREEK PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR VALLEY FORGE WOODS PUMP STATION



Two Radnor Corporate Center
100 Matsonford Road, Ste 250
Radnor, PA 19087

T: 484.253.4700

March 2, 2021

Mr. Richard Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460 [153258]

Subject: Tredyffrin Township, Paoli Drainage Basin, 2020 Municipal Wasteload Management Annual Report

Dear Mr. Taylor:

Enclosed please find two copies of the above-referenced report for the calendar year 2020. This information is submitted on behalf of Tredyffrin Township for the Valley Forge Sewer Authority's (VFSA) information and use.

Please send a copy of the VFSA Chapter 94 report to Tredyffrin Township once completed.

If you have any questions, please do not hesitate to contact me either via phone at 443.223.7308 or email: Slockhart@brwncald.com. Thank you!

Very truly yours,

Brown and Caldwell

Susanne Lockhart, P.E.
Project Manager

cc: Stephen Burgo, P.E., Tredyffrin Township
Gabrielle Ignarri, Tredyffrin Township

Valley Forge Sewer Authority
2020 Municipal Wasteload Management Annual Report

Prepared for

Tredyffrin Township

Chester County, Pennsylvania

March 2, 2021

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Tredyffrin Township**	Permit No.:	**PA**
Mailing Address:	**1100 Duportail Road**	Effective Date:	
City, State, Zip:	**Berwyn, PA 19312**	Expiration Date:	
Contact Person:	**Stephen Burgo, PE**	Renewal Due Date:	
Title:	**Township Engineer**	Municipality:	**Tredyffrin**
Phone:	**610-644-1400**	County:	**Chester**
Email:	**Sburgo @tredyffrin.org**	Consultant Name:	**Brown and Caldwell**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   See Exhibit 1 for Hydraulic and Organic Loadings

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

See Exhibit 2 Sewer Extensions

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

See Exhibit 3 Program for Sewer System Monitoring, Maintenance and Repair

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments: See Exhibit 4 - Condition of the Sewer System

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations
☒ The collection system does contain pump stations (Number – **5**)
☒ Discussion of condition of each pump station attached (**Exhibit 5**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)
☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Stephen Burgo, PE	SBM
Name of Responsible Official	Signature
610-644-1400	3/3/2021
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Susanne Lockhart, PE	Susanne Lockhart
Name of Preparer	Signature
443-223-7308	**03/02/21**
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located and the name of the consultant (company name), if any, who assisted in the preparation of the form

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94 12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

Valley Forge Sewer Authority
2020 Municipal Wasteload Management Annual Report

Prepared for
Tredyffrin Township
Chester County, Pennsylvania
March 2, 2021

Brown AND Caldwell
Two Radnor Corporate Center
100 Matsonford Road, Ste 250
Radnor, PA 19087

Table of Contents

List of Tables

List of Attachments

Exhibit 1. Hydraulic and Organic Loading

The total number of equivalent dwelling units (EDUs) connected to the Paoli sanitary sewer basin in 2020 was 7,318.6. These connected EDU's contributed 0.706 million gallons per day (MGD). The projected flows are found in Table 1-1.

Table 1-1. Valley Creek Trunk Sewer - Paoli Basin EDU Projections

Year	Additional Number of EDUs	Total Number of EDUs	Total MGD
Actual 2020[1]	389	7318.6	0.811
Projected 2021[2]	49	7367.6	0.824
Projected 2022[2]	191	7558.6	0.877
Projected 2023[2]	2	7560.6	0.877
Projected 2024[2]	0	7560.6	0.877
Projected 2025[2]	0	7560.6	0.877

1. Source is 2020 4th Quarter Flow Report from VFSA on Feb 19, 2021.

2. Estimated additional flows are based on EDUs of 275 gallons per day per EDU.

The increase in number of connections was based on Tredyffrin Township records of proposed developments.

The organic load projections are based on a 5-day biochemical oxygen demand (BOD_5) of 200 milligrams per liter (mg/L), which is used in the loading calculation of:

Total MGD per year x 200 mg/L BOD_5 x 8.34 pounds per gallon (lb/gallon) = X lbs/day

Table 1-1A. Valley Creek Trunk Sewer - Paoli Basin 5-year Hydraulic and Organic Loading Projections

YEAR	Projected Flow (MGD)	BOD_5 (mg/L)	BOD_5 (lbs/day)
2020	0.811	200	1,352
2021	0.824	200	1,375
2022	0.877	200	1,462
2023	0.877	200	1,463
2024	0.877	200	1,463
2025	0.877	200	1,463

Exhibit 2. Sanitary Sewer Extensions

Table 2-1 lists the 5-year projections for sewer connections/extensions within the Paoli drainage basin.

Table 2-1. Valley Creek Trunk Sewer - Paoli Basin Sewer Extensions							
Development/Extensions	TOTAL EDUs 2021 - 2025	2020	2021	2022	2023	2024	2025
Highgrove	5	1	1	2	2		
Station Square	0	153					
Howellville Road	24			24			
Sage Atwater	0	108					
Atwater 11A and 11B	18		18				
Lancaster Chestnut Assoc.	17		17				
341 Beechwood	2		2				
585 Berkshire	1		1				
598-600 Upper Gulph Road	0	2					
1237 Lancaster Ave	10		10				
Swedesford Plaza (ECHO Realty)	125	125		125			
1690 Russell Road Assisted Living	40			40			
TOTAL	242	389	49	191	2	0	0

Exhibit 3. Sewer System Monitoring and Maintenance

In 2020, Tredyffrin Township Department of Public Works had five full time staff including the Public Works Director who are dedicated to the operation and maintenance of the sanitary sewer collection system. Other departments within Tredyffrin Township may assist as needed. Tredyffrin Township subcontracts with Municipal Maintenance to perform the non-routine maintenance on the sewer pumping stations. Tredyffrin Township has performed extensive closed-circuit television (CCTV) inspection of the Township's sewer piping, hundreds of manhole inspections and has a flusher truck for removing blockages and other debris.

Exhibit 4. Condition of the Sewer System

The rehabilitation of the Wilson Road Force Main was completed in December 2016. In general, the system is in good condition with consistent maintenance activities being performed.

In December 2018, the Valley Creek Trunk Sewer System was sold to Aqua Resources, Inc. The assets included in the sale are: Valley Creek Trunk Sewer, Wilson Road Force Main and Wilson Road Pumping Station, Darby Road Pumping Station and Force Main, the Glenn Avenue Force Main and the Lancaster Avenue Force Main. Glenn Avenue Pumping Station and Lancaster Avenue Pumping Station were not included in the sale.

Exhibit 5. Wastewater Pumping Stations

Within the Township's Sewer Collection System, there are five pumping stations that contribute flow to the Valley Forge Sewer Authority Pawling Road Wastewater Treatment Plant. Darby Road and Wilson Road Pumping Stations were included in the VCTS sale.

Table 5-1. Valley Creek Trunk Sewer - Paoli Basin Pumping Stations					
Pumping Station	Capacity (MGD)	2020 Average Flow (MGD)	2020 Peak Flow[1] (MGD)	Projected 2022 Average Flow[2] (MGD)	Projected 2022 Peak Flow[1] (MGD)
Lancaster Avenue	0.300	0.014	0.034	0.040	0.101
Glenn Avenue	0.313	0.036	0.090	0.063	0.157
Chesterbrook	0.909	0.088	0.220	0.115	0.287
Summerhill	0.144	0.006	0.016	0.033	0.082
Atwater/Church Road	0.274	0.023	0.059	0.050	0.125

1. Peak flow = 2.5x average daily flow.

2. Projected flow based on Table 1A 5 Year Flow Projections incorporating planned development.

3. Flow calculations are based on pump run time.

Exhibit 6. Flow Meter Calibration Documentation

The Township maintains multiple flow meters within their system. Attached is the documentation that regular calibration of these meters occurs as part of ongoing maintenance of the system.

Attachment A:
Exhibit 6: Flow Meter Calibration Documentation

Certificate # 5157

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTOMER: TredyFFRin Township

LOCATION: Pump Stations

LOOP OR SYSTEM ID: Remote Pump Station

CALIBRATED RANGE: ____ TOTALIZER MULTIPLIER ____

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 60 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	HACH	~~FL~~-9000	n/A	UltRAsonic
2	~~S~~PARling	Tigermag	m141394509	magmeter
3	Badger	M2000	0716200	magmeter
4	Thermo Dynamic	SX-40		Doppler

REMARKS:

CALIBRATION DATE: 10 / 26 / 20 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022
Empire	CAlibrated Rule	403	
Endress Hauser	verificator Field Check		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

CUSTOMER SERVICE REPORT # SR 37948

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.
REFERENCE NO.

BILL TO
TReadyFrein Township

CUSTOMER SITE/LOCATION
Richards Rd. Lorwood PS
Pine Hill Glen Ave
Church Rd
Sorrel Hill PS

CONTACT:

CONTACT:

REQUESTED SERVICES	CODES		
Semi-Annual Flow meter Calibrations	DEM	PMP	PMB
	QRT	COB	CON
	WAR	SAL	ENG
	OTHER:		

WORK PERFORMED	EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM
Completed Semi-Annual Flow meter calibrations Found all meters operating correct. Richards Rd metering chamber was dirty. Removed grit from flume. Need to set spray chamber. All other stations were clean and meters in good working order.				

QTY	PART/PRODUCT NUMBER	AMOUNT

[A] PARTS TOTAL ➤	
LABOR (REG.) 8 HRS@ /HR	
LABOR (O.T.) HRS@ /HR	
LUMP SUM:	
[B] LABOR TOTAL ➤	
EXPENSES (TOLLS, ROOMS, MEALS)	
MILEAGE 60 MILES@ /MILE	
AIR AND/OR CAR RENTAL	
[C] EXPENSE TOTAL ➤	
[D] SHIPPING CHARGES ➤	
TOTAL [A] + [B] + [C] + [D] ➤	
SALES TAX OR TAX ID # ( )	
OTHER:	
FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)
CERTIFICATIONS REQUIRED: YES ☐ NO ☐ NIST: YES ☐ NO ☐
FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP ☐

SERVICE REPRESENTATIVE	CUSTOMER SIGNATURE	MO.	DAY	YR.
	X	10	26	20

CUSTOMER COPY

CUSTOMER SERVICE REPORT # SR53340

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.	
REFERENCE NO.	

BILL TO
Reddy FF Rin Twp

CONTACT:

CUSTOMER SITE/LOCATION
Richards Rd
Pine Hill
Church
Somerdale

CONTACT:

REQUESTED SERVICES
Quarterly Flow meter calibrations

CODES
DEM PMP PMB
QRT COB CON
WAR SAL ENG
OTHER:

WORK PERFORMED
Completed inspection & calibration of all Flow meters at pump stations and open channel pits.

Installed temporary Hach FL-900 at Richards Rd. Checked actual flow to Hach display. No problems found

Performed calibration to Somerdale and Church PS's. no problems found

Boxwood sparling flowmeter has defective display. Unable to calibrate due to display. meter is no longer reparable by factory. Meter is working - parts may be found on E-Bay?

EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT

[A] PARTS TOTAL ➤	
LABOR (REG.) ½ HRS@ /HR	
LABOR (O.T.) HRS@ /HR	
LUMP SUM:	
[B] LABOR TOTAL ➤	
EXPENSES (TOLLS, ROOMS, MEALS)	
MILEAGE 85 MILES@ /MILE	
AIR AND/OR CAR RENTAL	
[C] EXPENSE TOTAL ➤	
[D] SHIPPING CHARGES ➤	
TOTAL [A] + [B] + [C] + [D] ➤	
SALES TAX OR TAX ID # ( )	
OTHER:	
FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)
CERTIFICATIONS REQUIRED: YES ☑ NO ☐ NIST: YES ☐ NO ☐
FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP

SERVICE REPRESENTATIVE	CUSTOMER SIGNATURE	MO.	DAY	YR.
		3	30	20

ACS
ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5314

CERTIFICATE OF CALIBRATION

CUSTOMER: [illegible] Township

LOCATION: Pump Stations

LOOP OR SYSTEM ID: Sewage Flow

CALIBRATED RANGE: ______ TOTALIZER MULTIPLIER ______

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of ______ deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Hach	FL900	N/A	Ultrasonic
2	Sigma	950	41	Ultrasonic
3	Badger	M2000	A716100	Magmeter signal converter
4	Endress Hauser	[illegible]	N/A	Magmeter signal converter

REMARKS: ______

CALIBRATION DATE: 9 / 30 / 2020 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	
Badger	Verificator	1703 [illegible]	
Endress Hauser	Verificator FieldCheck		[illegible]

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

ALLIED CONTROL SERVICES, INC.

511 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

INVOICE

Invoice Number: 314225
Invoice Date: 03/30/2020

Sold To:
Township of Tredyffrin
1100 Duportail Road
Berwyn, PA 19312

Ship To: DEM-00-1027
Richards Road, Pine Hill, Church,
Boxwood and Somerdale

Customer ID	Customer PO	Payment Terms	
TRED01	D. Fitzgerald	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	3/30/2020	4/29/2020

Qty	P/N	Description	Unit Price	Extension
2.50	DEMAND ITM	Richards Road on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #533 40 for more details.	124.00	310.00
1.00	DEMAND ITM	Pine Hill on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	124.00
1.00	DEMAND ITM	Church Road on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #533 40for more details.	124.00	124.00
1.00	DEMAND ITM	Somerdale on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	124.00
2.50	DEMAND ITM	Boxwood on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	310.00
25.00	MILEAGE	Total Mileage Charge	0.88	22.00

Semi annual
Calibration

Subtotal	$1,014.00
Sales Tax	0.00
Total Invoice Amount	1,014.00
Payment/Credit Applied	0.00
TOTAL	$1,014.00

Check/Credit Memo No.

ACS

CUSTOMER SERVICE REPORT

SR53340

314225

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.

REFERENCE NO.

BILL TO	CUSTOMER SITE/LOCATION
TreddyFFRin Twp	Richards Rd Pine Hill Church Somerdale
CONTACT:	CONTACT:

REQUESTED SERVICES: Quarterly Flow meter calibrations — dem 801029 259 0033

CODES: DEM (circled) PMP PMB QRT COB CON WAR SAL ENG OTHER:

WORK PERFORMED

Completed inspection & calibration of All Flow meters at pump stations and open channel pits.

Installed Tempory Hach FL-900 at Richards Rd. Checked actual Flow to Hach display. no problems

Performed verification to Summerdale and Church Rd P.S. no problems found

Boxwood Sparling magmeter has defective Display. Unable to calibrate due to display. meter is no longer Repairable by Factory. Meter is working - Parts may be found on E-Bay?

EQUIPMENT REMOVED OR DELIVERED

DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT

[A] PARTS TOTAL ➤	
LABOR (REG.) 8 HRS@ 124. /HR	992.00
LABOR (O.T.) HRS@ /HR	
LUMP SUM:	
[B] LABOR TOTAL ➤	
EXPENSES (TOLLS, ROOMS, MEALS)	
MILEAGE 25 MILES@ .88 /MILE	22.00
AIR AND/OR CAR RENTAL	
[C] EXPENSE TOTAL ➤	
[D] SHIPPING CHARGES ➤	
TOTAL [A] + [B] + [C] + [D] ➤	
SALES TAX OR TAX ID # ( )	
OTHER:	
FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)

CERTIFICATIONS REQUIRED: YES ☑ NO ☐ NIST: YES ☐ NO ☐

FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP

SERVICE REPRESENTATIVE: Greg Bucher

CUSTOMER SIGNATURE:

WILLISTOWN TOWNSHIP
MUNICIPAL WASTELOAD MANAGEMENT REPORT
VALLEY FORGE SEWER AUTHORITY
DRAINAGE AREA
CALENDAR YEAR 2020

MARCH 2021

PREPARED FOR:

WILLISTOWN TOWNSHIP
688 SUGARTOWN ROAD
MALVERN, PA 19355

SALLY SLOOK, TOWNSHIP MANAGER

PREPARED BY:

CARROLL ENGINEERING CORPORATION
949 EASTON ROAD
WARRINGTON, PA 18976

WILLIAM N. MALIN, P.E., VICE PRESIDENT

WASTEWATER FACILITIES PLAN

TABLE OF CONTENTS

SECTION 1
INTRODUCTION

Pursuant to Pennsylvania Chapter 94 Municipal Wasteload Management regulations and requirements, Willistown Township has prepared this 2020 Municipal Wasteload Management Annual Report for the Valley Forge Sewer Authority (VFSA) service area.

The Valley Forge Sewer Authority service area covers the northern one-third of the Township adjacent to Tredyffrin Township and Malvern Borough and generally east of Sugartown Road to the Easttown Township border. In addition, there is a small portion along the East Goshen Township Boundary that straddles Paoli Pike. Wastewater in the VFSA service area is conveyed via the Valley Creek Trunk Sewer (VCTS) to VFSA for treatment. In addition to collecting and conveying wastewater in Willistown Township, flows from East Whiteland and Malvern Borough are conveyed (wheeled flow) through Willistown to the VCTS and VFSA. The Valley Forge Sewer Authority service area is shown on the Wastewater Facilities Plan.

The Valley Forge Sewer Authority service area includes approximately 20 miles of 8" through 18" gravity sewers and 9 miles of pressure sewers. There are four municipal owned and one privately owned sewage pump stations in the VFSA service area. The private pump station is part of the Dovecote development and will be dedicated to the Township.

Wastewater from the VFSA service area enters Tredyffrin and Easttown Townships at five locations identified on the Wastewater Facilities Plan:

- Flow from Tredyffrin Township Drainage Area 1 is metered at the Cedar Hollow flow meter located on Cedar Hollow Road just north of Jacqueline Drive. Approximately 97% of all Willistown Township flow to VFSA flows through the Cedar Hollow meter.

- Seven un-metered EDU's on Central Avenue in Tredyffrin Township Drainage Area 2 connect to Tredyffrin Township's sewer system.

- Fifty-six EDU's on Plank Avenue, Paoli Pike, Richmond Drive, Wistar Road and Cobblestone Drive in Tredyffrin Township Drainage Area 3 connect directly to Tredyffrin Township's sewer system.

- Flow from Easttown Township Drainage Area 1 is metered at the Pheasant Run flow meter located in Pheasant Run Drive.

- One EDU on South Valley Road in Easttown Township Drainage Area 2 connects directly to Easttown Township's sewer system.

SECTION 2
HYDRAULIC LOADING

Willistown Township is allocated 1,438,000 gallons per day (GPD) of capacity in VFSA's treatment plant. In 2020, Willistown conveyed a monthly average daily flow of 1,305,107 GPD to VFSA. Currently, Willistown is using 90.8% of their allocated capacity. Flows conveyed to VSFA is summarized in Table No. 1.

The monthly average daily flow in 2020 decreased by approximately10% (141,727 GPD). The flow reduction is attributed to the completion of sewer system repairs. Willistown's long term (January 2015 through December 2020) monthly average daily flow is 1,227,965 GPD.

In 2020, one new EDU was connected in the VFSA service area. Projected flows for the new connections for the period 2021 through 2025 are shown in Table No. 2. Flows are projected to increase by 11,000 GPD in the next 5-years.

SECTION 3
CONDITION OF THE SEWER SYSTEM

Willistown's sewer system dates to the 1970's. Older portions of the system primarily consist of vitrified clay or asbestos cement pipe (VCP & ACP). New portions are PVC pipe. In 2014, the gravity sewer system was televised by a third-party contractor. In 2015 sewer defects and needed repairs were catalogued. Construction drawings for sewer repairs are being prepared. The previously identified emergency sewer repairs were completed between August 2018 and February 2019. Eight-hundred thirty feet of sewer and 6 manholes were replaced. In 2019, an additional 555' and 5 manholes were replaced.

SECTION 4
SEWAGE PUMPING STATIONS

There are four municipal owned and one privately owned pump stations in the VFSA service area. Pump Stations Nos. 1, 2, 4, and the privately-owned Dovecote Pump Station pump flow to Pump Station No. 3. Pump Station No. 3 pumps flow to the gravity sewer system tributary to the Cedar Hollow flow meter. The pump stations are shown on the Wastewater Facilities Plan.

Pump station flows are summarized as follows:

1. PUMP STATION No. 1:

Design Capacity:	288,000 GPD
Current 5-year Maximum Flow:	98,294 GPD
Projected 2-year Maximum Flow:	98,294 GPD

2. PUMP STATION No. 2:

Design Capacity:	720,000 GPD
Current 5-year Maximum Flow:	446,209 GPD
Projected 2-year Maximum Flow:	446,209 GPD

3. PUMP STATION No. 3:

Design Capacity:	2,880,000 GPD
Current 5-year Maximum Flow:	910,313 GPD
Projected 2-year Maximum Flow:	910,863 GPD

Current and projected pump station flows include flow from Pump Station Nos. 1, 2, 4 & Dovecote.

4. PUMP STATION No. 4:

Design Capacity:	288,000 GPD
Current 5-year Maximum Flow:	65,828 GPD
Projected 2-year Maximum Flow:	65,828 GPD

5. DOVECOTE PUMP STATION:

Pump station capacity and flow data is not currently available. There will be no additional flow in the next 2-years.

SECTION 5
INDUSTRIAL WASTES

Currently, there are no industrial users in the VFSA service area, nor are any planned in the future.

Table No. 1
Willistown Township
Valley Forge Sewer Authority Service Area
2020 Monthly Flow Summary

	Metered Flow								Un-Metered Flow							
	Metered Flows			Wheeled Flows												
Month	Cedar Hollow Flow (GPD)	Pheasant Run Flow (GPD)	Total Flow (GPD)	Woodview Flow (GPD)	Tidewater Flow (GPD)	Malvern Prep Flow (GPD)	Total Flow GPD	Net Metered Flow (GPD)	Cedar Hollow Flow (MGD)	Flow Analysis z-scale	Flow Analysis Corres. Flow	Peaking Factor ADF= 1.052	Total Un-metered EDU's	Base EDU Flow 275 Gal/EDU (GPD)	Corrected Un-metered Flow (GPD)	Total Willistown Flow (GPD)
January	1,174,735	96,014	1,270,749	6,888	9,503	8,810	25,201	1,245,548	1.175	0.322	1.127	1.042	73	20,075	20,921	1,266,469
February	1,234,623	73,089	1,307,713	6,818	10,241	8,810	25,869	1,281,844	1.235	0.533	1.214	1.123	73	20,075	22,541	1,304,385
March	1,224,793	81,871	1,306,664	7,197	10,135	8,810	26,142	1,280,522	1.225	0.499	1.193	1.103	73	20,075	22,149	1,302,671
April	1,458,294	91,861	1,550,155	7,947	10,977	7,014	25,938	1,524,217	1.458	1.240	1.506	1.393	73	20,075	27,957	1,552,174
May	1,370,957	95,685	1,466,642	7,768	10,658	7,014	25,440	1,441,201	1.371	0.978	1.406	1.301	73	20,075	26,112	1,467,314
June	1,221,635	91,040	1,312,675	7,920	9,745	7,014	24,679	1,287,996	1.222	0.488	1.192	1.102	73	20,075	22,127	1,310,123
July	1,148,937	85,604	1,234,541	7,970	12,139	12,287	32,396	1,202,145	1.149	0.227	1.106	1.023	73	20,075	20,534	1,222,679
August	1,036,251	71,068	1,107,318	8,648	12,139	12,287	33,074	1,074,244	1.036	-0.211	1.008	0.932	73	20,075	18,717	1,092,962
September	1,260,503	86,381	1,346,884	10,477	12,673	12,287	35,437	1,311,448	1.261	0.621	1.254	1.160	73	20,075	23,279	1,334,727
October	995,847	86,381	1,082,228	9,734	13,542	8,717	31,993	1,050,236	0.996	-0.380	0.974	0.901	73	20,075	18,080	1,068,316
November	1,129,241	86,381	1,215,622	13,162	12,663	8,717	34,542	1,181,080	1.129	0.154	1.094	1.011	73	20,075	20,305	1,201,386
December	1,452,196	86,381	1,538,577	7,600	11,926	8,717	28,243	1,510,334	1.452	1.222	1.495	1.382	73	20,075	27,749	1,538,084
Average																1,305,107

Table No. 2
Willistown Township
5-year Flow Projections

Project Name	Status	Projected EDU's	Projected Connections				
			2021	2022	2023	2024	2025
Troutbeck Farm	Preliminary	36		12	12	12	
59 Grubb Road	Preliminary	1					
107 Central Avenue	Preliminary	1					
1 Greenbriar Lane	Preliminary	4					
2291 South Valley Road	Preliminary	4	1	1	1	1	
Projected Annual EDU's			1	13	13	13	0
Projected Annual Flow @275 gallons per EDU (GPD)			275	3,575	3,575	3,575	0
Projected Cumulative EDU's			1	14	27	40	40
Projected Cumulative flow @275 gallons per EDU (GPD)			275	3,850	7,425	11,000	11,000
Existing Average Daily Flow January 2016 - December 2020 (GPD)			1,227,956	1,227,956	1,227,956	1,227,956	1,227,956
Projected Average Daily Flow (GPD)			1,228,231	1,231,806	1,235,381	1,238,956	1,238,956

Map Identifier	Project Name	Status	Projected EDU's
1	Troutbeck Farm	Preliminary	38
3	59 Grubb Road	Preliminary	1
4	107 Central Avenue	Preliminary	1
7	1 Greenbriar Lane	Preliminary	4
8	2291 South Valley Road	Preliminary	4

WASTEWATER FACILITIES PLAN

CHAPTER 94 REPORT
VALLEY FORGE SEWER AUTHORITY
DRAINAGE AREA

SITUATED IN:

WILLISTOWN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

PREPARED FOR:

WILLISTOWN TOWNSHIP
688 SUGARTOWN ROAD
MALVERN, PENNSYLVANIA 19355

Carroll Engineering Corporation

949 Easton Road
Warrington, PA 18976
Phone: 215-343-5700
Fax: 215-343-0875

630 Freedom Business Ctr., 3rd Fl.
King of Prussia, PA 19406
Phone: 610-489-5100

105 Raider Boulevard, Suite 206
Hillsborough, NJ 08844
Phone: 908-874-7500
Fax: 908-874-5762

101 Lindenwood Drive, Suite 225
Malvern, PA 19355
Phone: 484-875-3075

www.carrollengineering.com

DATE: 3/19/2021 JOB NO: 13-5502.08 SCALE: 1" = 800 ft.

5502_05_220_VFSA Map

Document Path: W:\GIS\Projects\Willistown\ArcMap\Overall_Presentation_031921.mxd

AQUA RESOURCES, INC.

VALLEY CREEK TRUNK SEWER

SANITARY SEWER COLLECTION SYSTEM

CHESTER COUNTY

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

FOR CALENDAR YEAR 2020

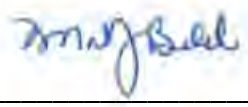
Prepared By:
Aqua Resources, Inc.
762 West Lancaster Avenue
Bryn Mawr, PA 19010

Aqua Resources, Inc.
762 West Lancaster Avenue
Bryn Mawr, PA 19010

Valley Creek Trunk Sewer
Sanitary Sewer Collection System
Chester County

This Chapter 94 Report for calendar year 2020 has been prepared by Aqua Resources, Inc. for the Valley Creek Trunk Sewer Sanitary Sewer Collection System in Chester County.

Respectfully Submitted,



Mark J. Bubel, P.E.
Project Engineer III - Wastewater
Aqua Resources, Inc.

Kyle Roberts
Manager, Wastewater Operations
Aqua Resources, Inc.

Aqua Resources, Inc.
Valley Creek Trunk Sewer
Sanitary Sewer Collection System
Chester County

Chapter 94 Municipal Wasteload Management Annual Report 2020

Table of Contents

Section **Page No**

Tables

Appendices

1. INTRODUCTION

In December 2018, Aqua Resources, Inc. (Aqua) acquired the Valley Creek Trunk Sewer (VCTS). The assets included are: Valley Creek Trunk Sewer (VCTS), Wilson Road Force Main (WRFM) and Wilson Road Pumping Station (WRPS), Darby Road Pumping Station (DRPS) and Force Main. The facilities included in this Chapter 94 document are those assets included in the 2018 system sale.

2. SEWER EXTENSIONS

There were no sewer extensions of the VCTS in 2020 and there are no proposed sewer extensions within the next five years. Partner municipalities will be submitting their own Chapter 94 reports to Valley Forge Sewer Authority (VFSA) with detailed information on their proposed sewer connections/extensions. Aqua will be requesting a copy of these Chapter 94 reports to monitor flow and connections into the VCTS. Projected flows within the VCTS are based on the 2017 Act 537 Supplement for the Wilson Road Force Main as shown in **Table 2**.

3. SEWER SYSTEM MONITORING, MAINTENANCE, AND REPAIR

Routine maintenance and monitoring of the sewer system was conducted in 2020. There were no major repairs required during the 2020 operating year. There are two flow meters that are utilized for flow monitoring. One meter is located at the DRPS and the other is located at the WRPS. The WRPS is critical because that is the final flow monitoring location within the VCTS sewer shed prior to entering the WRFM and finally the VFSA Pawling Road Plant for treatment.

In 2020, Aqua began working with Brown and Caldwell to develop a hydraulic model of the VCTS system in order to make more informed capacity evaluations. This model is currently being used for capacity evaluations for Act 537 Sewage Facility Planning Modules.

4. CONDITION OF THE SEWER

The rehabilitation of the WRFM was completed in December 2016. No SSO occurred in the VCTS system in 2020. In general, the system is in good condition with consistent maintenance activities being performed.

5. SEWAGE PUMPING STATIONS

Within the VCTS System, there are two pumping stations that contribute flow to the VFSA Pawling Road Wastewater Treatment Plant. Those two stations are Darby Road and Wilson Road Pumping Stations. **Table 1** presents the Permitted Capacity, Present Flow, and the 2-Year Projected Flow for each Pump Station. **Table 2** shows the flow projections for each pump station for the next five years. And, **Table 3** shows the monthly flow data for both pump stations for 2019 and 2020.

Wilson Road Pump Station

The Wilson Road Pump Station has three (3) pump and a design capacity of 14,000 GPM. This pump station coveys all flow from the VCTS to the VFSA WWTP. Based on the 2020 flow, the pump station is not hydraulically overloaded, and it's not projected to be overloaded within the next 2 years.

Pump station influent is divided between two channels, each housing a high-flow sewage grinder. In 2020, one of the grinders failed and was subsequently replaced. During grinder down time, influent channels could be isolated, and flow was sent through a single channel. A temporary secondary backup generator and an accompanying temporary switchgear were also installed in 2020 which allowed for upgrade of the existing backup generator. A generator control panel was also installed to allow operations staff to toggle between generators and utility power. Planned future upgrades include the replacement of the temporary switchgear and generator with permanent fixtures as well as an upgraded PLC.

Darby Road Pump Station

The Darby Road Pump Station has two (2) pumps and a design capacity of 700 GPM. Based on 2020 flows, the pump station is not hydraulically overloaded, and it's not projected to be overloaded within the next 2 years. Additionally, there are no major upgrades anticipated at this time.

6. INDUSTRIAL WASTES

Industrial wastes are managed by the VFSA as part of their Industrial Pretreatment Program.

7. CORRECTIVE ACTION PLAN

No Corrective Action Plan is warranted for the collection system and pump stations.

8. METER CALIBRATION REPORTS

Aqua maintains meters at the Darby Road Pump Station and Wilson Road Pump Station. These flow meters are that regularly calibrated, and **Appendix A** contains the meter calibration reports for 2020.

Table 1: Pump Station Present/Projected Flows								
Pump Station	Pump Station Capacity[1]		Present Flows			2-Year Projected Flows		
	Design Capacity (MGD)	Design Capacity (GPM)	Annual Average Flow (MGD)	Max Month Flow (MGD)	Peak Hourly Flow (GPM)[2]	Annual Average Flow (MGD)[3]	Max Month Flow (MGD)[4]	Peak Hourly Flow (GPM)[2]
Wilson Road Pump Station	20.16	14,000	5.34	6.46	8,525	5.70	7.05	9,102
Darby Road Pump Station	1.008	700	0.307	0.382	534	0.328	0.416	570

Notes:

1. Design capacities according to WQM permit No. 1571407 T-1.
2. Peak Hourly Flow was calculated using a peaking factor of 2.3 for the Wilson Road Pump Station and 2.5 for the Darby Road Pump Station
3. See Table 2 for future flow projections.
4. See Table 3 for Max Month to Annual Average Flow Ratio calculation.

Table 2: Flow Projections				
	Wilson Road Pump Station		Darby Road Pump Station	
	Actual/Projected Flow (MGD)	Projected Increase in Flow (MDG)[2]	Actual/Projected Flow (MGD)	Projected Increase in Flow (MDG)[3]
2020 [1]	5.34		0.31	
2021	5.52	0.1807	0.32	0.010
2022	5.70	0.1807	0.33	0.010
2023	5.88	0.1807	0.34	0.010
2024	6.06	0.1807	0.35	0.010
2025	6.24	0.1807	0.36	0.010

Notes:

1. Actual flows from 2020, see table 3
2. Projected flow based on Act 537 linear projection of 0.1807 MGD per increase for the Wilson Road PS
3. Projected flow increase per year for the Darby Road PS is 5.76% of the projection for the Wilson Road PS. This percentage is the 2020 Darby Rd PS flow divided by the 2020 Wilson Rd PS flows.

Table 3: Pump Station Monthly Flow Data				
Month	Wilson Road Pump Station[1]		Darby Road Pump Station[1]	
	2019	2020	2019	2020
Jan	7,538,146	5,175,664	408,958	276,552
Feb	6,868,244	5,441,979	327,043	303,039
Mar	7,336,703	5,300,408	364,532	312,694
Apr	6,104,184	6,147,236	356,717	335,622
May	6,496,086	5,643,927	330,483	311,481
Jun	6,527,558	5,104,476	291,010	319,267
Jul	6,357,218	4,986,043	407,281	288,523
Aug	5,147,039	5,425,162	285,055	320,132
Sep	4,727,014	4,632,663	277,897	277,897
Oct	4,562,321	4,608,627	233,268	258,235
Nov	4,639,715	5,125,251	241,267	303,520
Dec	5,177,742	6,457,927	277,897	381,552
Annual Average Flow	5,956,831	5,337,447	316,784	307,376
Max Month	7,538,146	6,457,927	408,958	381,552
Avg to Max Ratio	1.27	1.21	1.29	1.24
Average Max Month to Annual Avg Flow Ratio:		1.24		1.27

Notes:

1. Monthly flow data for the Wilson Rd PS and Darby Rd PS were not provided in previous Chapter 94 Reports and Aqua does not have monthly flow records for these pump station prior to taking ownership in December 2018.

Appendix A: Flow Meter Calibration Reports

1. Flow Meter Calibration Report for Darby Road Pump Station: 3/23/2020
2. Flow Meter Calibration Report for Darby Road Pump Station: 6/11/2020
3. Flow Meter Calibration Report for Darby Road Pump Station: 9/10/2020
4. Flow Meter Calibration Report for Wilson Road Pump Station: 3/23/2020
5. Flow Meter Calibration Report for Wilson Road Pump Station: 6/11/2020
6. Flow Meter Calibration Report for Wilson Road Pump Station: 9/10/2020

Certificate # 5310

ALLIED CONTROL SERVICES, INC.

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTOMER: HBK Gordon

LOCATION: Derby Rd Pump Station

LOOP OR SYSTEM ID: Pumped Flow

CALIBRATED RANGE: 0-1400 GPM TOTALIZER MULTIPLIER X100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 50 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3573	9803-27485-1-2	Magnetic Flow Meter
2	Precision Digital	PD6200	1103-0632163	Totalizer

REMARKS:

CALIBRATION DATE: 3/23/2020 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

Certificate # 5151

ALLIED CONTROL SERVICES, INC.

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTOMER: KBX Golden

LOCATION: DARBY RD

LOOP OR SYSTEM ID: Pump STATION Flow

CALIBRATED RANGE: 0-1400 GPM TOTALIZER MULTIPLIER X100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 70 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3570	NA	Signal Converter
1	Precision Digital	PDG57	NA	Digital Display / Totalizer

REMARKS: NO PROBLEMS FOUND

CALIBRATION DATE: 6 / 11 / 2010 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701026
Brooks	CALIBRATOR		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

Certificate # 5153

ALLIED CONTROL SERVICES, INC.

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTOMER: K B & Golden

LOCATION: DARBY RD PUMP STATION

LOOP OR SYSTEM ID: Effluent

CALIBRATED RANGE 0-1400 GPM TOTALIZER MULTIPLIER 100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of ______ deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3570	7801-79K5-12	magmeter
2	Precision Digital	PDG57		Digital Totalizer

REMARKS: no problems Found

CALIBRATION DATE: 9 / 10 / 3[illegible] TECHNICIAN: [illegible signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022
Brooks	calibrator		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbx golden
Address	kennett square pa
Phone	610 444 3551
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson rd p.s.

Results:

Verification file name or No.		Wilson rd
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	**Current Output**			**Frequency Output**		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.11%	0.500kHz	0.498kHz	-0.34%
1.0m/s	5.600mA	5.597mA	-0.16%	1.000kHz	0.998kHz	-0.22%
3.0m/s	8.800mA	8.800mA	0.00%	3.000kHz	3.001kHz	0.04%

Current Output 4-20mA Frequency Output 0-10kHz

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		17320.57588481 US MG
Totalizer 1 value after test		17320.57588481 US MG
Totalizer 2 value before test		15718.35019534 US MG
Totalizer 2 value after test		15718.35019534 US MG
Operating time in days		3265

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.03.24 George Buchser

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbr golden
Address	
	mike
Phone	484 431 4616
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson rd

Results:

Verification file name or No.		wilson rd
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	**Current Output**			**Frequency Output**		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.797mA	-0.40%	0.500kHz	0.498kHz	-0.46%
1.0m/s	5.600mA	5.599mA	-0.04%	1.000kHz	1.000kHz	-0.01%
3.0m/s	8.800mA	8.798mA	-0.04%	3.000kHz	3.001kHz	0.03%
	Current Output 4-20mA			Frequency Output 0-10kHz		

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		17780.15706141 US MG
Totalizer 1 value after test		17780.15706141 US MG
Totalizer 2 value before test		16177.93137193 US MG
Totalizer 2 value after test		16177.93137193 US MG
Operating time in days		3342

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.06.11 george buchser

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbr golden
Address	
	mike
Phone	484 431 4616
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson 9-2020

Results:

Verification file name or No.		Wilson rd 9-2020
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	Current Output			Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.796mA	-0.44%	0.500kHz	0.498kHz	-0.45%
1.0m/s	5.600mA	5.599mA	-0.06%	1.000kHz	1.000kHz	0.00%
3.0m/s	8.800mA	8.798mA	-0.05%	3.000kHz	3.001kHz	0.05%

Current Output 4-20mA Frequency Output 0-10kHz

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		18247.08856119 US MG
Totalizer 1 value after test		18247.08856119 US MG
Totalizer 2 value before test		16644.86392841 US MG
Totalizer 2 value after test		16644.86392841 US MG
Operating time in days		3432

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.09.10 george buchser